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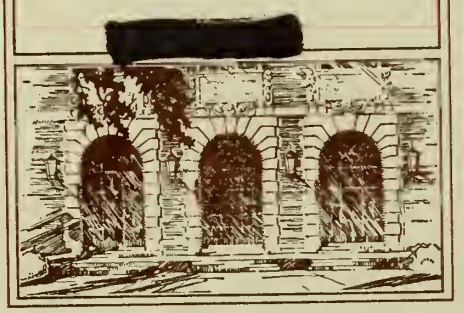

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Report of the

National Commission on Diabetes

to the Congress of the United States

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Volume I

THE LONG-RANGE PLAN TO COMBAT DIABETES

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service National Institutes of Health

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"The National Diabetes Mellitus Research and Education Act" (Public Law 93-354), signed by the President on July 23, 1974, directed the appointment of a National Commission on Diabetes whose charge was to formulate a long-range plan of research and education to combat diabetes mellitus. The Commission submitted its report to Congress on December 10, 1975.

REPORT OF THE NATIONAL COMMISSION ON DIABETES

Volume I - The Long-Range Plan to Combat Diabetes

Volume II Contributors to the Deliberations of the Commission
- Part 1 - Public Testimony (Public Hearings 1-5)
- Part 2 - A. Public Testimony (Public Hearing 6 and Interviews)
  - B. Biographical Sketches of Commission Members and Consultants

Volume III - Reports of Committees, Subcommittees, and Workgroups
- Part 1 - Scope and Impact of Diabetes (I)
- Part 2 - Scope and Impact of Diabetes (II)
- Part 3 - Etiology and Pathology of Diabetes
- Part 4 - Treatment of Diabetes
- Part 5 - Diabetes Education for Health Professionals, Patients, and the Public
- Part 6 - Workgroup Reports
  - A. Diabetes Research and Training Centers
  - B. Veterans Administration Programs for Diabetes
  - C. Center for Disease Control: Diabetes Control Programs
  - D. National System for Diabetes Data Resources
  - E. Federal Resources

Volume IV - Supporting Materials to the Commission Reports
- A. Summary of Federal Health Legislation Pertaining to Diabetes
- B. Summary of Diabetes Program Funding
- C. Special Reports

Report of the

National Commission on Diabetes

to the Congress of the United States

Volume I

THE LONG-RANGE PLAN TO COMBAT DIABETES

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service National Institutes of Health
DHEW Publication No. (NIH) 76-1018

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NATIONAL COMMISSION ON DIABETES

December 10, 1975

Honorable Nelson A. Rockefeller
President of the United States Senate
United States Senate
Washington, D.C. 20510

Dear Mr. President:

On behalf of the National Commission on Diabetes, I am pleased to transmit herewith our Report pursuant to Public Law 93-354, the National Diabetes Mellitus Research and Education Act.

Based upon its investigations over the past nine months, and in accordance with the aforementioned statute, the Commission has prepared a Long-Range Plan to Combat Diabetes with specific recommendations for the utilization and organization of national health resources.

This Long-Range Plan, presented in the first volume of the Commission's Report, is based upon a comprehensive study of the magnitude of the disease, its causes, consequences, and the resources available for dealing with it. Many scientists, health professionals, and other individuals familiar with this disease and its consequences helped produce the detailed data and findings found in the other volumes of the Report. These provide a solid base for further study and research and governmental action.

We believe that our Report will be of value to Congress, the Administration, and the American people. It establishes the urgent need to address directly and fully the tragedy of diabetes mellitus.

The Commission is grateful to have had the opportunity to prepare this Report and our Long-Range Plan. The members of the Commission wish to emphasize our continuing deep concern about this disease and our belief in the importance of full and timely implementation of the Plan. It is our sincere desire to continue to assist the Congress, the Administration, and the American people in their efforts to successfully combat diabetes mellitus.

Respectfully,

Oscar B. Crofford

Oscar B. Crofford, M.D.
Chairman

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NATIONAL COMMISSION ON DIABETES

December 10, 1975

Honorable Carl Albert
Speaker of the House
House of Representatives
Washington, D.C. 20515

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On behalf of the National Commission on Diabetes, I am pleased to transmit herewith our Report pursuant to Public Law 93-354, the National Diabetes Mellitus Research and Education Act.

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PREFACE

Congress required in "The National Diabetes Mellitus Research and Education Act" (Public Law 93-354, July 23, 1974) that the Director of the National Institutes of Health establish a National Commission on Diabetes charged with the task of formulating a long-range plan to combat diabetes. The plan would serve the goals of expanding and coordinating national research on diabetes mellitus; of advancing the education of patients, health professionals, and the general public for improved detection and control of diabetes; and of disseminating updated information about diabetes.

The Commission consists of 17 members -- six nongovernment scientists or physicians; four persons from the general public, at least two of whom have diabetes or children with diabetes; and the Directors of seven of the National Institutes of Health. The Commission met for the first time in March 1975, and initiated a series of deliberations aimed at preparing a report for submission to the Congress on December 10, 1975. Committees and workgroups of the Commission intensively researched and reported on specialized topics related to diabetes.

The Long-Range Plan was developed on the basis of information collected in a comprehensive survey of the epidemiology and nature of diabetes and its economic and social consequences. The Commission evaluated the most recent scientific information, consulted with nearly 300 experts in diabetes and diabetes-related disciplines from the United States and Western Europe, and heard extensive public testimony in cities throughout the nation. The result was the formulation of a plan that represents the express needs of an interacting social system -- the patient, the health care deliverer, the medical researcher, and the public.

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THE LONG-RANGE PLAN TO COMBAT DIABETES

OVERVIEW

THE PROBLEM

In the legislation establishing the National Commission on Diabetes, Congress recognized that diabetes mellitus is a major health problem directly affecting as many as 10,000,000 Americans. The prevalence of the disease is increasing rapidly. Most people suffering from diabetes face the probability of major complications and shortened life spans.

The National Commission on Diabetes has confirmed and further detailed these findings:

- Between 1965 and 1973 the prevalence of diabetes increased by more than 50% in the United States. Diabetes now affects 5% of the population.

- In 1974 more than 600,000 new cases of diabetes were diagnosed, and the incidence of diabetes appears to be increasing by 6% per year. At this rate, the number of people with diabetes will double every fifteen years. The average American born today has a better than one in five chance of developing diabetes, unless a method of prevention is found.

- Diabetics are 25 times more prone to blindness than nondiabetics, 17 times more prone to kidney disease, 5 times more prone to gangrene -- often leading to amputation -- and twice as prone to heart disease. The life expectancy among people with diabetes is approximately one third less than that of the general population.

Although diabetes was recognized as early as 2000 B.C., no suitable treatment was available until the discovery of insulin in 1921. Until then, patients with diabetes rarely survived more than one or two years after diagnosis. Insulin treatment prevented death from diabetic coma and controlled the overt symptoms of the disease, and was mistakenly believed to be a "cure" for diabetes. The prolonged life span made possible by insulin, however, revealed new complications associated with diabetes, such as blindness, kidney disease, and cardiovascular disease. Today, large blood vessel disease accounts for an estimated 75% of all deaths among known diabetics.

Mortality statistics do not generally specify underlying or contributing causes of death, resulting in a lack of accurate information on the actual death rate from diabetes. Nevertheless, 38,000 deaths were directly attributable to diabetes in the United States last year, making it the fifth leading cause of death from disease. Strong evidence presented to the Commission indicates that diabetes and its complications are responsible for more than 300,000 deaths annually, raising diabetes to the third ranking cause of death--behind cardiovascular disease and cancer.

Efforts to cope with diabetes have failed to prevent the disease from increasing. Few substantial improvements in therapy have occurred since the discovery of insulin more than 50 years ago. Despite considerable research in diabetes and metab-

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olism, the biochemical basis of the disease remains unknown.

- Women are 50% more likely than men to have diabetes, non-whites are one fifth more likely than whites to have diabetes, and poor people (incomes less than $5,000 per year) are three times as likely as middle-income and wealthy people to have diabetes.

- The chance of being diabetic more than doubles for every 20% of excess weight and doubles for every decade of life.

Because of the serious and widespread health problems associated with diabetes, expanded research programs are needed. Work must be accelerated not only to prevent and cure diabetes, but also to develop better methods for treating the disease and its complications, which affect virtually every system of the human body.

The research needs are particularly acute for those suffering from insulin-dependent, juvenile-onset diabetes. Approximately half of all children with diabetes now living will die of renal disease within an average of 25 years after the diagnosis of diabetes. The Commission estimates that there are 86,000 of these juvenile-onset diabetic children facing the prospect of blindness and death from kidney failure prior to the age of 40.

Added to the physical problems of diabetes are the psychosocial and economic effects on the diabetic patient and his family. Of the diabetic population, 14% are bedridden for an average of one and one-half months per year. No other chronic disease causes so many days in bed among the non-institutionalized population. Persons with diabetes, faced with the prospect of a life-long disease, possible blindness, and a decreased life expectancy, are understandably plagued by fear and in need of education and counseling. Because the disease requires daily attention, persons with diabetes need instruction in self-therapy -- how to administer their own insulin, how to regulate their diet, how to balance physical activity with diet and insulin, and how to explain their disease to others. Likewise, their families need to know these therapies and need counseling about how to live with a person with diabetes.

In addition, public attention must be focused on diabetes, on the limitations of insulin therapy, and on the economic consequences of diabetes. The direct and indirect impact of diabetes on the nation's economy is currently estimated at more than $5 billion per year -- even without considering the costs of complications. The economic impact of diabetes today is more than double what it was eight years ago.

THE NEED FOR A PLAN

The stated purpose of the National Diabetes Mellitus Research and Education Act is to:

- Expand the authority of the National Institutes of Health to advance the national attack on diabetes mellitus.

- As part of the attack, to establish a long-range plan to:

  - expand and coordinate the national research effort;

  - advance activities of patient education, professional education, and public education which will alert the citizens of the United States to the early indications of diabetes; and

  - emphasize the significance of early detection, proper control, and complications which may evolve from the disease.

Combating diabetes and its associated problems will require a coordinated pro-

gram of research and education. Ways must be found to translate research advances into health care delivery. Methods are needed to identify the educational needs of the patient and to ensure the availability of educational materials. Mechanisms should be established to coordinate all these diverse but related activities.

THE STRUCTURE OF THE PLAN

The Commission has formulated a Long-Range Plan comprising four components:

- DIABETES RESEARCH PROGRAMS
- DIABETES RESEARCH AND TRAINING CENTERS
- DIABETES HEALTH CARE, EDUCATION, AND CONTROL PROGRAM ACTIVITIES
- THE NATIONAL DIABETES ADVISORY BOARD

Through implementation of these four components, the objectives of the Long-Range Plan to Combat Diabetes can be achieved.

Diabetes Research Programs

Basic research into the cause, cure, and prevention of diabetes and related endocrine disorders must be continued and expanded. This can be accomplished primarily through the extramural and intramural research programs sponsored by the National Institute of Arthritis, Metabolism, and Digestive Diseases; the National Eye Institute; the National Institute of Neurological and Communicative Disorders and Stroke; the National Heart and Lung Institute; the National Institute of General Medical Sciences; the National Institute of Child Health and Human Development; and the National Institute of Dental Research.

Research manpower can be increased through more special fellowships and Research Career Development Awards, a step essential for providing a suitable number of investigators trained in diabetes and related metabolic and endocrine disorders.

Clinical research can most effectively incorporate the successful results of basic research through increased support for the existing General Clinical Research Centers.

The establishment of Research Resource Facilities will provide valuable resources, such as animal models, needed for basic research into genetic and other etiologic factors of diabetes.

Development of a system for communicating information on current and proposed research to scientists will prevent wasteful duplication of efforts and stimulate new research concepts.

Diabetes Research and Training Centers

As part of the National Diabetes Mellitus Research and Education Act, Congress authorized Diabetes Research and Training Centers. These Centers, located throughout the country, will conduct (1) basic and clinical research in diabetes and related conditions, (2) training programs for physicians and allied health personnel, and (3) professional information programs for primary care physicians and other health professionals. The Commission was charged with the responsibility for making recommendations for the development and expansion of such Centers.

The Commission's proposals provide the Centers with the structure and resources needed to conduct high-quality research in diabetes and its management, to generate competent professional personnel in research and patient care, and to translate advances in diabetes research into improved patient care through patient care demonstration units and community outreach programs.

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The Centers are a microcosm of the entire Long-Range Plan. Their research and training programs will eventually provide the skilled health professionals and new treatment techniques needed by all agencies and systems involved in diabetes health care. The Centers will also benefit from the other components of the Long-Range Plan -- through new research, new information and educational programs, and a more coordinated approach to the problem of diabetes.

Diabetes Health Care, Education, and Control Program Activities

These activities are designed to help bring effective health care to the majority of the population with diabetes. The recommendations in this component of the Long-Range Plan are specifically concerned with the following areas:

1. Diabetes Control Program of the Center for Disease Control (CDC). A series of state or more locally based diabetes control programs, fostered and supported by the CDC, provide a resource capable of reaching virtually the entire population with diabetes in the United States. The responsibility for organizing these local programs will rest with a diabetes program advisor assigned by the CDC to the state or local agency. The CDC will also train the staff and provide technical consultation for the local programs, as well as compile public health and other related data. Coordination of these programs by the CDC will ensure that the operation of the overall control program is not only internally consistent, but also properly meshed with all other elements of the Long-Range Plan.

2. Diabetes Programs of the Veterans Administration. The VA, an important research, teaching, and health care delivery system, has already exhibited a commitment to the diabetes community. The VA treats more than 15,000 diabetic inpatients and several times that number on an out-patient basis. The proposed Special Programs in Diabetes emphasize new therapies, evaluative studies of current therapy modes, manpower training, and additional funding for diabetes research.

3. Diabetes Programs of Other Federal Agencies. Programs of potential benefit to diabetics have been identified in the Health Services Administration; the Health Resources Administration; the Alcohol, Drug Abuse, and Mental Health Administration; the Social Security Administration; the Social and Rehabilitation Service; the Department of Agriculture; and the Department of Defense. A thorough report to the Secretary of HEW should be prepared by these agencies, detailing the resources available for diabetes and additional needed resources that could be utilized. This will provide information for coordinating programs in the most efficient manner, and will direct the diabetic population and the public to available services.

4. National Diabetes Information and Education Clearinghouse. The Commission proposes a Clearinghouse to collect, evaluate, and disseminate information about the prevention, diagnosis, and treatment of diabetes. The Clearinghouse will sponsor surveys to assess health care knowledge and attitudes. This information will be used to identify educational needs and to recommend or develop the needed materials. The Clearinghouse will promote rapid flow of research data from all diabetes programs, accelerating the immediate translation of research advances into continuing education, information, and materials.

5. Evaluation Studies. To identify the most effective methods of health care and education programs, the submission of evaluation study proposals should be encouraged.

6. National Diabetes Data Group. To provide accurate statistics on diabetes which support public health policy, a Data Group is to coordinate the epidemiologic

information to be collected and analyzed, seek changes in reporting systems, and sponsor cost-benefit studies of program alternatives. Resulting data will be published to assist investigators, those persons responsible for implementation of the Long-Range Plan, and other agencies of the Government.

THE IMPLEMENTATION OF THE PLAN

National Diabetes Advisory Board

The Commission's proposal for creating a National Diabetes Advisory Board is an important substantive part of the Long-Range Plan. The Board will serve as an essential focus for evaluating the various related, but widely dispersed, programs and resources necessary to combat diabetes.

The National Diabetes Advisory Board will also serve to review the implementation of the other components of the Long-Range Plan, and to advise the Government and the general public on the progress and results.

In the pages that follow, the Commission details the Long-Range Plan to Combat Diabetes, including the specific legislative and budgetary recommendations that will enable all aspects of the Plan to be fully and expeditiously carried out.

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I

THE NATIONAL DIABETES ADVISORY BOARD

Congress established the National Commission on Diabetes to "formulate a long-range plan to combat diabetes mellitus with specific recommendations for the utilization and organization of national resources."

After deliberations with its committees and workgroups, the Commission concluded that progress in diabetes research and treatment has been hampered by both a lack of resources and the absence of an organizational focus.

The Commission's deliberations highlighted the fact that diabetes is unique; unlike other diseases, it is often accompanied by an array of severe and debilitating complications, such as blindness, kidney failure, heart attack, stroke, gangrene, and complications of pregnancy and reproduction, that affect virtually every organ of the body. Both the Research Programs outlined in Section II and the Health Care, Education, and Control Program activities described in Section IV of the Long-Range Plan to Combat Diabetes involve large and diverse groups of government agencies and private organizations that relate to diabetes. These include: the National Institutes of Health, the Center for Disease Control, the Health Resources Administration, the Health Services Administration, and numerous additional agencies and bureaus of the Department of Health, Education, and Welfare; other Federal agencies including the Veterans Administration, the Department of Agriculture, and the Department of Defense; and a variety of State and local government agencies, private industry, and the voluntary health organizations. Each of these agencies and organizations has unique attributes that are necessary to implement the particular functions proposed for it. However, no single agency or coordinating body now exists that is capable of successful reviewing and evaluating the implementation of the entire Long-Range Plan. The Commission believes that a new organization is necessary to accomplish this essential task and recommends the establishment of a National Diabetes Advisory Board.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS TO THE CONGRESS THAT (1) A NATIONAL DIABETES ADVISORY BOARD BE ESTABLISHED TO REVIEW, EVALUATE, AND ADVISE WITH REGARD TO THE IMPLEMENTATION OF THE LONG-RANGE PLAN TO COMBAT DIABETES, (2) THAT THE BOARD BE ESTABLISHED ACCORDING TO THE SPECIFICATIONS SET FORTH IN THIS SECTION, AND (3) THAT THE BOARD BE LOCATED IN THE OFFICE OF THE ASSISTANT SECRETARY FOR HEALTH.

The Commission proposes specific legislation for establishing the National Diabetes Advisory Board (p. 81). The purpose of the National Diabetes Advisory Board is to review, evaluate, and advise with regard to the implementation of the Long-Range Plan. In so doing, the Board will act as both an advisory and advocacy body and will serve to facilitate action for the utilization and coordination of national resources--Federal, State, local, and private--for diabetes research. treatment, and education. Activities to carry out these purposes will be undertaken by the Board and working committees composed of members and consultant nonmembers who have expertise in particular areas. These committees should undertake activities to develop support for programs in their areas of expertise, advise

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and give technical assistance to Federal agencies to aid them in designing and implementing new programs, and coordinate resource utilization efforts among various Federal, State, and local diabetes programs.

The Board should be authorized to collect, generate, and exchange diabetes-related information as necessary to enable it to perform its functions effectively. Most of the necessary information will be available from Federal, State, local, and private organizations. Special committees of the Board may be needed to conduct special studies, surveys, reports, projects, and public hearings, which may be jointly sponsored by other government or private groups and which concern activities outside the traditional purview of the National Institutes of Health in their diabetes-related research programs.

• The National Diabetes Advisory Board should meet quarterly and as necessary.

To provide a structure and focus for its activities, the National Diabetes Advisory Board should hold quarterly meetings, with additional meetings of the full Board or any of its committees as necessary to accomplish its objectives.

• The National Diabetes Advisory Board should be required to submit an annual report simultaneously to the Congress and the Administration detailing its activities and evaluating the progress made in the implementation of the Commission's Long-Range Plan.

The Board's activities should be carefully and completely described in a comprehensive Annual Diabetes Report submitted simultaneously to Congress and the Administration two months prior to the transmission of the President's budget to Congress. The Report should describe general progress made during the previous year in diabetes research, treatment, and education, with specific reference to the Long-Range Plan.

The Report should contain a detailed budget analysis for current diabetes-related expenditures and should suggest recommendations for expenditures for the forthcoming year. It should also discuss possible changes in the Long-Range Plan necessitated by developments in the field and should outline proposed Advisory Board activities for the next year.

• The National Diabetes Advisory Board should be composed of the following twenty-three members:

a. The Assistant Secretary for Health.

b. The Director of the National Institutes of Health.

c. The Director of the National Institute of Arthritis, Metabolism, and Digestive Diseases.

d. The Director of the Center for Disease Control.

e. The Administrator of the Health Services Administration.

f. The Administrator of the Health Resources Administration.

g. The Chairperson of the Diabetes Mellitus Coordinating Committee.

h. Two members of the Senate Committee on Labor and Public Welfare designated by the President of the Senate.

i. Two members of the House Committee on Interstate and Foreign Commerce designated by the Speaker of the House.

j. Seven persons appointed by the Secretary of HEW who are not Federal Government employees and who are physicians, other health professionals, or scientists representing the various specialties involved with diabetes and related endocrine and metabolic diseases.

k. Five lay persons appointed by the Secretary of HEW representing the general public and including at least one person with diabetes and one parent of a diabetic child. These persons should be drawn from such groups as the voluntary health agencies dealing with diabetes and related endocrine and metabolic diseases, educators, business and industry leaders, and representatives of the communications media.

The effectiveness of the National Diabetes Advisory Board will depend to a substantial degree upon the individual and collective stature and influence of its members. Accordingly, the health leadership of both the Administration and the Congress should be designated as permanent members of the Board. (Although members may occasionally need to designate substitutes to represent them at meetings, they should not be permitted to delegate their voting authority.) These members are capable of designing sound diabetes policy recommendations, as well as putting those policies into effect. At the same time, membership should be widely representative of the diabetes community, and should include patients and those who treat, work, and live among them.

Since the role of the Board requires that it review the activities of Federal agencies, the majority of the members and the chairperson should not be employees of the Federal Government. Instead, they should be individuals with personal or professional interest in diabetes and its major complications who can contribute their special perspectives on Federal diabetes programs and provide the essential liason with the programs and activities of non-Federal diabetes-related interests.

The twelve non-Federal Government members of the National Diabetes Advisory Board should be appointed for terms of either two or three years. Six members appointed initially for terms of three years will be succeeded by members appointed for the remaining two years. Six members appointed initially for two-year terms will be succeeded by members appointed for the remaining three years.

• The National Diabetes Advisory Board should be aided by a small staff composed of experienced professionals and support personnel.

The Commission proposes that the National Diabetes Advisory Board be served by a small staff composed of an Executive Director, Assistant Director, Administrative Assistant, and two secretaries. The Executive Director and Assistant Director should be excepted appointments outside the Civil Service Register. The staff will assist the Board and its subcommittees in preparing documents, conducting meetings, collecting data, and any other activities the Board undertakes. For increased effectiveness, the staff should be authorized to make use of other available resources through interaction and coordination with Congressional committee staff, DHEW and other Federal agency personnel, State and local health officials, and private individuals and organizations. The Board should also have the authority to contract for services not available from these sources.

• The National Diabetes Advisory Board should have an annual budget of $500,000.

The Commission's proposal anticipates that the Board's budget will be a

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line item in the budget of the Office of the Assistant Secretary. The $500,000 would be allocated as follows:

Professional and Support Staff (all expenses, including office overhead and fringe benefits)	$175,000
Meetings (full Board and committees)	75,000
Other	
Special Surveys, Studies, and Projects	150,000
Plan Monitoring and Analysis Support	100,000
Total	$500,000

• The National Diabetes Advisory Board should continue for five years from the date of its first meeting unless renewed or extended by Congress.

The five-year life span for the Board coincides with the timing of many of the Commission's other recommendations. The proposal explicitly gives Congress the option to renew or extend the Board's life if necessary to ensure full implementation of the Long-Range Plan.

There will be an interim between the submission of this report and the establishment of the National Diabetes Advisory Board. To sustain the momentum and enthusiastic support for a diabetes program that has developed among the public and Congress, the Commission believes that program implementation should begin during this interim.

• The National Commission on Diabetes should assume the responsibilities specified for the National Diabetes Advisory Board until the Board is established.

Recognizing that the National Diabetes Advisory Board could not be established before January 1976, the Commission requested in October 1975 that its life be extended for up to ten months to enable it to begin the implementation of the Long-Range Plan.

• The Diabetes Mellitus Coordinating Committee should serve as a primary source to the Board for the development of coordination among Federal agencies.

The Diabetes Mellitus Coordinating Committee has recently begun to establish a series of inter- and intra-agency linkages. The Board should work in close cooperation with the Committee, which can serve as a valuable resource for organization and coordination of these agencies.

Rationale for Establishing a National Diabetes Advisory Board

In designing the National Diabetes Advisory Board, the Commission considered several alternatives which are summarized below. The Commission first examined the appropriateness of assigning the role to either of two existing Federal Government agencies: the National Institute of Arthritis, Metabolism, and Digestive Diseases (NIAMDD) and the Diabetes Mellitus Coordinating Committee.

The Commission concluded that NIAMDD, the primary center for diabetes research activities, should not be charged with reviewing activities in the nonresearch areas of diabetes. Also, since the Commission has recommended broad new operational responsibilities for NIAMDD, it would be inappropriate to place NIAMDD in the position of reviewing and evaluating its own activities.

The Diabetes Mellitus Coordinating Committee, created by Congress to perform a specific and limited function, lacks sufficient authority to review and evaluate

the implementation of the Long-Range Plan. In addition, the Coordinating Committee is composed solely of Federal officials and cannot directly represent the interests and concerns of the non-Federal diabetes community. The Coordinating Committee will, however, serve as an indispensable resource for the Board and provide the necessary liason with those Federal agencies not directly represented in the Board's membership.

The Commission decided that for the immediate future a new organizational entity was necessary. The notion of consolidating all diabetes programs into a new "National Institute of Diabetes" had strong surface appeal, but the Commission decided that such an effort ultimately would be counterproductive. Isolating research in diabetes from research programs for other diseases could greatly decrease the scope and effectiveness of diabetes-related research. Also, the Commission did not favor the legislative establishment of a National Institute of Diabetes with responsibility for coordinating and implementing those aspects of the Long-Range Plan dealing with treatment and education since these functions are not traditionally the main focus of Institutes of NIH.

The Commission decided that the National Diabetes Advisory Board should be created by legislation. New legislation is necessary to give the organization sufficient operational authority to undertake the wide range of activities necessary to accomplish its goals. The administrative alternative, an advisory committee established by the DHEW without new legislation, would be strictly limited to a solely advisory role by the Federal Advisory Committee Act and, without continued support of the Administration, could automatically expire after two years without having had sufficient opportunity to ensure successful implementation of the Long-Range Plan.

Several alternative organizational locations were considered for the National Diabetes Advisory Board. The Board must be organizationally linked to diabetes-related programs of the Department of Health, Education, and Welfare (DHEW) to maximize influence both within and without DHEW. The need for effective department-wide coordination dictates that the Board be located in DHEW at a higher level than the various constituent agencies. Many aspects of the Long-Range Plan require the cooperation of government agencies outside of DHEW (e.g., Veterans Administration or state health agencies) and nongovernmental groups. An organization at a Cabinet level, i.e., under the Secretary of HEW, or sub-Cabinet level seems more likely to achieve effective interaction with those agencies and groups than would a lower echelon group; however, the issues addressed at the Cabinet level often are not health related and are of a much broader scope than diabetes. The Commission thought the Board would lack the necessary institutional support, and its effectiveness would be diluted in the Office of the Secretary.

Therefore, having reviewed the alternatives, the Commission concluded that the most effective means of reviewing, evaluating, and advising with respect to the implementation of the Long-Range Plan to Combat Diabetes would be the establishment by Congress of a National Diabetes Advisory Board in the Office of the Assistant Secretary for Health. The Commission believes that the specifications set forth in this section give the Board adequate stature and authority to assist and guide the implementation of the recommendations set forth in the subsequent sections of this report.

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II

RESEARCH PROGRAMS OF THE NATIONAL INSTITUTES OF HEALTH: CAUSES, PREVENTION, AND CURE FOR DIABETES

This component of the Long-Range Plan to Combat Diabetes deals with research programs of the National Institutes of Health. Its many facets include the search for the fundamental causes of diabetes and, through an understanding of the causes, the development of a cure or -- better -- a method of preventing diabetes. People with diabetes face the prospect of premature death, blindness, kidney failure, stroke, heart attack, neuropathy, gangrene, and the other debilitating complications of diabetes, unless a means is found to halt the progression of those complications.

The Commission is optimistic about the prospects for scientific discoveries related to diabetes. The workshops have identified many new and encouraging research directions, and the specific recommendations for the National Institutes of Health that follow propose increased efforts in those areas with the greatest potential or with the most critical needs. In many of these areas serious manpower shortages have severely limited past research. Thus, the initial recommendations for funding are, of necessity, conservative, since no amount of money can buy the needed scientific advances before fully trained researchers are available to conduct the investigations. The Commission proposes, therefore, a five-year incremental budget which includes specific recommendations for training of additional diabetes research manpower. Research funds will correspondingly increase as available personnel increases.

The Commission believes that the recommended avenues of investigation and the level of funding support are adequate, realistic, and offer hope to the diabetic community.

The recommendations are organized according to the following scheme.

Specific recommendations for support of extramural research are discussed in the first section. The recommendations are directed to the Institute which is the most appropriate sponsor. Proposals are arranged according to particular research areas with subareas specified where appropriate.

The second section contains a recommendation for continued and expanded intramural research within the National Institutes of Health themselves.

The last section deals with recommendations for additional resources necessary to carry out the substantive research proposals. These include recommendations to meet specific resource needs as well as general funding recommendations for the implementation of the entire proposed research program.

RESEARCH RECOMMENDATIONS: EXTRAMURAL RESEARCH

The large majority of funds of the National Institutes of Health are used to support the research efforts of scientific investigators working throughout the country. The following recommendations are directed toward specific Institutes sponsoring such extramural research.

A. Research in Diabetes-Related Endocrinology and Metabolism

In order to uncover the causes of diabetes and to discover the means to prevent and cure the disease, it is essential to fully understand the basic

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mechanisms of secretion and action of hormones relating to the derangements in diabetes as well as their interrelation with other metabolic processes and nutrition. This is an area where diabetes research is inextricably bound up with basic research related to other metabolic and endocrinologic disorders and to disorders relating to the complications of diabetes, where an interdisciplinary approach is essential. The results of such basic research could lead to discoveries affecting innumerable other diseases in addition to their specific applications to diabetes. Cross-fertilization of disciplines is essential to major advances in any field.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND DIGESTIVE DISEASES INCREASE ITS SUPPORT FOR RESEARCH EFFORTS IN BASIC ENDOCRINOLOGY, METABOLISM AND NUTRITION AND APPLY THE RESULTS OF SUCH RESEARCH TO THE STUDY OF DIABETIC DEFECTS AND THE CAUSES, PREVENTION, AND CURE FOR DIABETES.

Increased research efforts are recommended in the following areas:

Insulin

Important milestones in diabetes research have been achieved in recent years through cross-fertilization of ideas from differing areas of basic research. Through the development of radio-immunoassays, investigators can now measure insulin levels in body fluids. Prior to those developments the manifest effects of insulin could be observed, but assays of insulin were virtually impossible since the concentration of insulin in the blood constitutes only one part in one billion. Basic research in protein chemistry has led to a better understanding of the molecular arrangement and biosynthesis of insulin.

Until a cure or better methods of therapy are found for diabetes, much of the world's diabetic population will continue to be dependent on a continuing supply of insulin. With an increasing population and an escalating incidence of diabetes, there is serious concern that adequate supplies of insulin will no longer be available from animal pancreases. Research into the synthesis of insulin and other mechanisms for increasing the world's insulin supply must be of high priority in diabetes research.

Glucagon and Other Hormones

Glucagon, another hormone secreted by the islets of Langerhans, occurs in abnormally high levels in individuals with diabetes. Recent studies are uncovering a whole new array of interactions among hormones with possible relation to diabetes, including somatostatin and growth hormone. Whether or not this will lead to any improvement of therapy, as has been suggested, cannot be said at this time, but this new knowledge will undoubtedly have a significant impact on understanding of hormonal interrelations, particularly of those hormones affected in diabetes.

Viruses

Although present knowledge is not conclusive, evidence indicates that there may be more than one cause of diabetes. Anecdotal reports of the development of juvenile diabetes after measles, mumps, and even the common cold have appeared for decades; recent evidence makes this a real possibility. The incidence of new cases of juvenile diabetes have been correlated with Coxsackie B virus infection. Another virus can cause diabetes in some strains of mice. This is an exciting problem, and there is a need to further explore the mechanisms and to assess the role of viruses in the etiology of diabetes.

Genetics

The tendency for diabetes to occur in families has been established, and it is well recognized that genetic factors are important in the etiology of this disease. However, the nature of these genetic factors and how diabetes is inherited have not been elucidated, primarily because of the difficulty in accurately defining the disease, the effect of the environment on the expression of the disease, and the fact that the disorder often goes undiagnosed and has marked variability in the age of onset, making accurate family histories difficult to obtain. Thus far, since the basic defects present in diabetes have not been fully identified, it has not been possible to pinpoint the specific genetic markers which would identify individuals who have predisposing genes for diabetes. Research in these areas is necessary both to identify those persons with a genetic predisposition for diabetes and eventually to prevent the disorder.

Epidemiology

Both the prevalence and incidence of diagnosed diabetes has increased by more than 50% since 1965. As has been discussed, diabetes has been associated with obesity and nutritional patterns, viral infection, and increasing age, and has been shown to occur in families. The precise knowledge of the relative importance of these factors is lacking. The National Health Examination Survey and the National Health Interview Study conducted by the National Center for Health Statistics have provided useful information, but epidemiological studies of discrete populations are needed to further elucidate our understanding of diabetes. Illustrative of these is the study of the Pima Indians in Arizona, a population in which the incidence of diabetes is significantly higher than in the general population.

B. Research in Nutrition and Obesity

Nutrition and eating patterns are important factors in both the etiology and treatment of diabetes. Maturity-onset diabetes rises and falls with the nutrition of the society; among starving populations the disease is infrequent, among overfed populations it is endemic.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND DIGESTIVE DISEASES (1) INCREASE ITS SUPPORT FOR RESEARCH EFFORTS IN NUTRITION RELATING TO DIABETES AND TO OBESITY IN DIABETICS, AND (2) INCREASE THE NUMBER OF ITS OBESITY CENTERS TO THREE TO ENCOURAGE SUCH RESEARCH AND TO TRAIN MANPOWER IN THIS AREA.

Although the connection has never been conclusively established, obesity is strongly suspected to be one of the causes of diabetes. Seventy percent of all adult-onset diabetic patients are overweight and the incidence of diabetes among individuals who accumulate excess weight between the ages of 25 and 44 is several times higher than normal. Obese individuals have a higher than normal insulin requirement. Further research on the relation between obesity and diabetes is of paramount importance. In addition, studies on the psychology of calorie intake, the underlying causes of overweight, and the neuropathology of appetite control are essential. In order to encourage this badly needed research and train necessary research manpower, the Commission proposes that the Obesity Centers program be expanded to include three such centers.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT SPONSOR A LONG-RANGE CLINICAL STUDY OF THE EFFECTS OF INFANT FEEDING ON THE DEVELOPMENT OF OBESITY AND DIABETES.

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An important extension of the investigations relating to diabetes and obesity is research on the effects of infant feeding patterns. This research is essential to relate nutrition and eating habits during the formative years to the development of obesity and diabetes.

C. Research Approaches to Transplantation and to Management of Diabetes with Artificial Devices

Although ultimate goals of diabetes research are to discover methods of prevention and a cure for diabetes, better methods of therapy must be given high research priority in order to improve the quality of life for today's patient with diabetes. Two new approaches are currently under study--transplantation of the pancreas or islet cells, and development of artificial devices to monitor blood glucose and administer insulin proportionately. Both approaches would eliminate the necessity for daily insulin injections and might ameliorate or prevent the complications of diabetes through normal control of blood glucose.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND DIGESTIVE DISEASES (1) ESTABLISH AN AD HOC ADVISORY PANEL ON TRANSPLANTATION AND ARTIFICIAL DEVICES, AND (2) COMMENSURATE WITH THEIR RECOMMENDATIONS, INCREASE SUPPORT OF RESEARCH EFFORTS IN TRANSPLANTATION OF THE PANCREAS OR ISLET CELLS AND DEVELOPMENT OF ARTIFICIAL DEVICES.

Between December 1966 and July 1975 a total of 46 pancreas transplants have been reported. By July 1975, the transplanted organ was still functioning in four of these patients ten or more months after transplantation. These procedures clearly demonstrate that pancreas transplantation can maintain normal blood glucose without additional insulin therapy, but whether it can alter the progression of diabetic complications will not be known until transplants can be maintained functioning over periods of several years.

Since insulin is secreted by only a small number of widely dispersed cells, the islets of Langerhans, transplantation of these cells and not the entire pancreas may be a more desirable approach. Such transplants have been successful in maintaining normal blood glucose levels in highly inbred experimental animals. Nevertheless, a variety of serious problems must be overcome before the technique can be attempted in human subjects. These include the development of methods to isolate the relatively few and widely dispersed islet cells, methods of storage and maintenance of these cells prior to transplantation, and identification of the best site for injection or transplantation of the islet cells. In addition, the problems of autoimmune reaction and rejection of the transplant are common to both pancreas and islet cell transplantation.

Significant advances have also been made in the development of artificial devices to control blood glucose levels by delivery of appropriate amounts of insulin. Canadian and West German scientists have developed a large device, which is not portable and must be used at the bedside, which permits clinical investigations on the moment-to-moment blood glucose levels and will administer appropriate amounts of insulin in diabetic patients. At the present time, none of these devices are in clinical use in the United States. Additional clinical studies with this "macro" device are needed to provide basic information required for the development of a miniaturized, implantable device. In addition, other problems exist which must be solved before successful development of an implantable device will be possible. Some of these are: research on types of glucose sensors (or other methods for measuring blood glucose) and the long-term stability of this

component; appropriate monitoring sites for glucose concentrations; biocompatibility of materials, especially the membrane coverings; development of pumps for insulin delivery systems; and miniaturization of computer components.

For both transplantation of pancreas and islet cells and implantation of artificial devices, standard well-designed protocols must be developed to ensure reliable evaluations of clinical trials and to test the hypothesis that normal control of blood glucose will prevent or ameliorate the development of diabetic complications. An Ad Hoc Advisory Panel on Transplantation and Artificial Devices should be formed to: (1) assist in evaluating and monitoring animal studies of transplantation; (2) aid in the initiation and evaluation of limited clinical trials; and (3) participate in the development of protocols for subsequent clinical trials and standardized surgical techniques. Membership on the panel should include representatives of the following disciplines: bioengineering, transplantation surgery, immunology, clinical diabetology (internal medicine and pediatrics), and basic scientists with expertise on the structure and function of islet cells.

D. Approaches to Therapy and Prevention of Complications

Nearly all persons with diabetes develop at least some complications of the disease. Although individuals with juvenile-onset (i.e., insulin-dependent) diabetes generally experience the greatest degree of complications, individuals with maturity-onset (i.e., non-insulin-dependent or diet-controlled) diabetes are not free from such complications.

Complications of Juvenile-Onset Diabetes

Data on the complications of juvenile-onset diabetes indicate the following: among juveniles with diabetes followed for fifteen years or longer, 63% develop eye disease, of which 2% become totally blind; 20% develop high blood pressure; nearly 100% of those afflicted develop fibrosis and scarring of the renal glomeruli (impaired kidney function). About one half of the patients with juvenile-onset diabetes will die of kidney failure with an average life expectancy of 25 years after the diagnosis of diabetes. The problems are immense and cause untold suffering, loss of income, and destruction of family life as well as shortened life span.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE NATIONAL HEART AND LUNG INSTITUTE AND THE NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND DIGESTIVE DISEASES INITIATE AND SUPPORT A FIVE-YEAR CLINICAL STUDY TO ASSESS THE EFFECT OF TREATMENT OF JUVENILE-ONSET DIABETES ON THE DEVELOPMENT OF MICROVASCULAR AND MACROVASCULAR COMPLICATIONS.

Whether or not the major complications of diabetes are correlated with the wide variations of blood glucose levels which occur in juvenile diabetics is a subject of continued debate. Advocates of rigid control of glucose levels appear to have preliminary evidence to support their claim that such control lessens or delays the appearance of most complications. On the other hand, diabetologists who favor less rigid or "loose" control cite anecdotal evidence to the contrary. This controversy can only be resolved by a well-controlled clinical study of "tight" versus "loose" control of juvenile diabetes to compare the effects that each has on the development of the microvascular and macrovascular complications. The need to resolve this problem is immediate since wide-scale use of alternative therapies (e.g., transplantation or artificial devices) is not likely to impact the majority of diabetic patients for many years.

Such a study requires extensive preliminary planning, careful long-term

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monitoring and evaluation, and effective administration. An advisory group should be established as an integral part of the project to assist with all of these functions.

Complications of the Vascular System

The development of microangiopathy and macroangiopathy are basic to almost all other complications of diabetes; thus studies of these processes and their underlying defects are of prime importance.

Macroangiopathy. The research on diseases of the large blood vessels sponsored by the National Heart and Lung Institute has important implications for all other complications of diabetes.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE NATIONAL HEART AND LUNG INSTITUTE INCREASE ITS SUPPORT FOR (1) THOSE RESEARCH EFFORTS IN HEART DISEASE, PERIPHERAL VASCULAR DISEASE, ATHEROSCLEROSIS, HYPERTENSION, AND BLOOD COAGULATION THAT RELATE TO DIABETIC MORBIDITY AND MORTALITY AND (2) THOSE STUDIES ALREADY UNDER WAY WHICH ARE UNIQUE TO DIABETIC MACROANGIOPATHY.

The vascular system is the central focus for many of the complications of diabetes including blindness, kidney failure, heart attacks, strokes, and gangrene. Macroangiopathy involves all blood vessels larger than capillaries. Atherosclerosis, which is part of the usual aging process, is markedly accelerated in the diabetic patient, both juvenile-onset and maturity-onset. Recent surveys indicate that the risk of cardiovascular events at any given age is two to five times higher for the diabetic individual than the non-diabetic. Although the severity of atherosclerosis does not correlate significantly with high blood glucose levels, there is greater correlation with other diabetes-related phenomena -- elevated levels of triglycerides, obesity, and overnutrition. Innumerable questions remain to be answered in this area including the following: What is the basic process in the formation of vascular atheromatous lesions? What is the relation of cholesterol and elevated levels of circulating lipids to diabetes? Are there basic differences in the blood vessel walls between normal and diabetic tissue? Do the hearts of diabetics function less well than those of non-diabetics?

While there are many research opportunities in this area that are specific and singular to diabetes, it is also recognized that many basic and applied research projects may also have a profound impact on diabetic morbidity and mortality, especially in the area of cardiovascular complications. The Commission is aware that numerous opportunities exist to relate such studies to the needs of the diabetic patient and to explore to what degree and how their findings may find application and impact on the long-term prognosis of diabetes. Thus, the National Heart and Lung Institute, its advisors, and consultants are urged strongly to take account of these opportunities for research affecting diabetics and to develop studies, programs, and resources. While such activities must articulate closely with existing studies, they will require appropriate development if these needs of the chronic diabetic are to be met.

Microangiopathy. The National Institute of Arthritis, Metabolism, and Digestive Diseases also supports many studies on the effect of diabetes on the small blood vessels and capillaries.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND DIGESTIVE DISEASES INCREASE ITS SUPPORT FOR RESEARCH ON DIABETIC MICROANGIOPATHY.

Capillaries are the network of small blood vessels that link the arterial and venous portions of the vascular system. They are vitally important for carrying blood to all body cells and exchanging nutrients and oxygen for waste materials. Capillaries are composed of a single layer of cells encased in a protein support structure--the basement membrane. With the advent of electron microscopy, differences have been noted between normal and diabetic tissues, including a thickening of the capillary basement membrane and variations in its composition and metabolism. These changes in the basement membranes are especially noticeable in the eye and kidney and appear to be the pathology that links such diverse complications as blindness and kidney failure. Studies are needed to determine, among other things, whether transplantation or use of artificial devices to control blood glucose will have any beneficial effect on these derangements in the basement membrane. This identifiable index should be included in protocols testing the efficacy of new or improved treatment.

Complications of the Eye

Diabetic retinopathy is the second most common cause of blindness in the United States; it is the leading cause of new cases of blindness in adults.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE NATIONAL EYE INSTITUTE INCREASE ITS SUPPORT FOR RESEARCH ON THE CAUSES AND TREATMENT OF DIABETIC RETINOPATHY.

The basic pathology of diabetic retinopathy involves changes in the vascular structure of the eye which are progressive and may ultimately lead to blindness. These changes are similar to those that occur in other organs, especially the kidney. The relatively less complex organ structure of the eye provides a unique opportunity for more easily accessible tissue to study the pathological processes of microangiopathy in the retinal vessels, including thickening and basic biochemistry of the basement membrane, and the clinical effectiveness of therapeutic agents. Although there is a limitation on manpower in vision research, there is a somewhat larger reservoir of trained biomedical researchers in the basic sciences concerned with diabetes research. Their attention should be directed to the specific current research opportunities to use the eye as a model in studying the basic pathogenesis of the diabetic state.

Epidemiological studies in groups of high diabetes prevalence such as the natives of the Marshall Islands and the Pima Indians in Arizona should be expanded to include case control studies of individuals with diabetes with and without diabetic retinopathy, and the role of systemic hypertension in the incidence of diabetic retinopathy. Studies of the natural history of diabetic retinopathy could be included as part of broad epidemiological investigations in cooperation with other Institutes of the National Institutes of Health.

Neurological Complications

The term "diabetic neuropathy" is applied to the diverse abnormalities that occur in peripheral nerves (nerves outside of the brain and spinal cord) of the diabetic. All individuals with diabetes have some demonstrable alteration in their peripheral nerves. Approximately one-fourth are symptomatic and one half of these symptoms are severe enough to cause partial or total disability, accompanied by intense pain and eventual loss of sensation. The anesthesized extremities are susceptible to injury and ulceration, which may contribute, in many cases, to loss of the affected extremity.

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- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE NATIONAL INSTITUTE OF NEUROLOGICAL AND COMMUNICATIVE DISORDERS AND STROKE INCREASE ITS SUPPORT FOR BASIC RESEARCH RELATING TO PERIPHERAL NEUROPATHY, STROKE, AND OTHER NEURAL DISORDERS PREVALENT IN DIABETICS.

Peripheral nerve cells are often several feet long, beginning, for instance, in the spinal cord and ending in the foot. The cells are covered by a membrane called myelin in association with Schwann cells. Because of their greater surface area, nerves may be more extensively exposed to toxic influences caused by metabolic alterations in body fluids than are other body cells. Despite our basic knowledge of the physiology of nerve cells, the myelin membrane, and Schwann cells, information is especially primitive in relation to diabetes. A Commission workgroup found that fewer than six researchers worldwide are directing their investigations specifically toward diabetic neuropathy and that there is need for much more interdisciplinary cooperation.

At present, support for research in diabetic neuropathy is extremely limited. Increased manpower is necessary as are programs to interest neurologists, neurochemists, diabetologists, neuropathologists, and biochemists in the basic problems of neuropathy. The basic physiology and pathology of nerves must be extensively studied before real advances in prevention and treatment of diabetic neuropathy can be achieved.

Dental Complications

While the incidence of dental caries is no greater than normal among diabetics, the incidence of serious periodontal disease among individuals with diabetes is estimated to be as much as three times higher than among normal individuals. Generally the disease is more serious and progresses more rapidly in diabetic patients.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE NATIONAL INSTITUTE OF DENTAL RESEARCH INCREASE ITS SUPPORT FOR RESEARCH ON THE DENTAL COMPLICATIONS OF DIABETES.

Periodontal disease affects the connective tissue between the tooth and the bone; teeth become loose and eventually are dislodged. In the advanced stages of diabetic periodontal disease there is a progressive deterioration of the bone itself. Although this process is generally associated with periodontal disease, it may also be related to the predisposition of diabetic patients to develop loss of bone throughout the body (generalized osteoporosis). Periodontal disease causes serious difficulties in mastication and other discomforts and problems such as infection. In addition, it can be a serious financial burden, since periodontal care is expensive and is generally not covered by most third-party payment systems.

Although the bacterial flora of the mouth has been studied extensively in normal individuals, few studies have been made of the flora of individuals with diabetes. More knowledge is needed about the natural history and microbiology of diabetic dental complications. In addition, experimental animal models are needed in order to develop therapeutic approaches to the treatment of periodontal disease associated with diabetes.

Obstetrical Complications

Prior to the discovery of insulin, individuals with juvenile diabetes did not survive for more than one or two years, so no thought was given to potential problems of pregnancy. With insulin therapy and extended life span came the recognition that pregnancy posed serious threats

to the life of the diabetic mother; diabetic ketoacidosis in the mother almost uniformly resulted in fetal death. Close control of diabetes during pregnancy has decreased maternal mortality to near normal, but the survival rate for offspring is still substantially lower than in normal pregnancies. Evidence indicates that those babies that do survive have a high incidence of congenital abnormalities.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT (1) INCREASE ITS SUPPORT FOR BASIC AND CLINICAL RESEARCH ON PREGNANCY AND DIABETES AND (2) SPONSOR A FOLLOW-UP STUDY OF INFANTS OF DIABETIC MOTHERS.

Although nutrients such as glucose cross the placenta from mother to child, hormones such as insulin, glucagon, and growth hormone do not. By the second or third month of pregnancy the fetus is generating its own hormones. The relationship between fetus and mother requires alterations in maternal metabolism that are not fully understood. The effect on the mother of fetal insulin and glucagon needs to be clarified. Sudden intra-uterine death, almost unique to diabetic pregnancy, is still a serious problem, and studies are needed to determine the precise timing of delivery to avoid this problem while assuring that the fetus has matured as fully as possible. In addition, studies are necessary regarding "gestational" diabetes, a form of the disease which occurs only while the mother is pregnant.

A long-term clinical follow-up study is suggested for the offspring of diabetic mothers to measure such factors as intelligence as related to neonatal hypoglycemia and maternal obesity. Such a project should be done in cooperation with the Collaborative Perinatal Project of the National Institute of Neurological and Communicative Disorders and Stroke, which now includes 60,000 offspring of 50,000 mothers.

Contraceptive techniques for diabetic women is an area that requires additional study.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT INCREASE ITS SUPPORT FOR RESEARCH ON CONTRACEPTIVE AGENTS AND DIABETES.

The exacerbation of diabetes by pregnancy alerted investigators to study carefully the effects on diabetic patients of oral contraceptive agents; however, no conclusive results have yet been forthcoming, and there is considerable need for more extensive studies of contraceptive methods for the diabetic individual. For example, the use of oral contraceptive steroids, dosage, drug used, duration, and age of the female are all still topics of controversy in regard to their effects on metabolism in the non-diabetic population, and their short- and long-term effects in already established diabetics have not been studied. Likewise, the use of other contraceptive techniques, such as intrauterine devices or vaginal spermicides, has not been evaluated in diabetic populations in respect to their emotional, social, and physical effects as compared to the emotional and physical morbidity and even potential mortality of a diabetic pregnancy, planned or unplanned.

RESEARCH RECOMMENDATIONS: INTRAMURAL RESEARCH

In addition to the support of outside research investigators, the National Institutes of Health also conduct outstanding programs of intramural research in many areas. The Commission therefore proposes increased intramural research activities within three Institutes.

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- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND DIGESTIVE DISEASES, THE NATIONAL EYE INSTITUTE, AND THE NATIONAL INSTITUTE OF DENTAL RESEARCH EXPAND THEIR INTRAMURAL RESEARCH PROGRAMS RELATING TO DIABETES.

The National Institute of Arthritis, Metabolism, and Digestive Diseases conducts valuable research on metabolic defects in diabetes and related conditions such as obesity. Major emphasis has centered on the nature of circulating insulin and growth hormone and their immunologic and biologic properties, and on the mechanisms of action of insulin, growth hormone, and glucagon. These studies have already yielded important information on the nature of the insulin receptor and its alteration in states of insulin resistance. Additional studies are needed to relate this work more closely to the pathogenesis of diabetes.

The National Eye Institute has an outstanding ongoing program of basic studies relating to diabetic complications affecting the eye. The Clinical Branch is investigating tissue cultures of retinal vascular cells. The Laboratory of Vision is conducting studies on the relationship of the enzyme aldose reductase to the formation of cataracts.

The National Institute of Dental Research is conducting research on the relation of viruses to the etiology of diabetes as well as a number of other fundamental studies relevant to diabetes; these include studies on the structure of collagen, changes in the basement membrane, inflammatory changes in the periodontium, and the development of congenital abnormalities.

The caliber and importance of research efforts in each of these Institutes dictate that continued and increased support is essential.

RESOURCE RECOMMENDATIONS

The following recommendations relate to those additional resources that the Commission believes are necessary to support the research programs that have been proposed.

A. Manpower

The National Institute of Arthritis, Metabolism, and Digestive Diseases has been the agency primarily responsible for research manpower training in diabetes, endocrinology, and related metabolic disorders. The purpose of the research manpower training programs is to ensure that a national pool of high-quality biomedical researchers will be available in sufficient numbers to meet the changing needs and demands of biomedical research. The Commission has found a serious shortage of trained manpower for diabetes research in many areas.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS TO THE NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND DIGESTIVE DISEASES, THE NATIONAL EYE INSTITUTE, THE NATIONAL INSTITUTE OF NEUROLOGICAL AND COMMUNICATIVE DISORDERS AND STROKE, THE NATIONAL INSTITUTE OF DENTAL RESEARCH, AND THE NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT THAT THEY MAKE EVERY EFFORT TO EXPAND THE FELLOWSHIPS AND SPECIAL AWARDS IN THE AREA OF DIABETES-RELATED STUDIES IN ACCORDANCE WITH THE LEVELS INDICATED.

To a very large extent, increased research productivity in diabetes is tied to the availability of trained research personnel, who have been in short supply for diabetes research. Congress recognized this problem when it authorized the establishment of the Diabetes Research

and Training Centers, which are discussed in detail later in this report. These Centers cannot begin to fill their role in training additional manpower to fill the unmet research needs unless sufficient fellowship training support in diabetes and related endocrine and metabolic disorders is available through an expanded program of National Research Service Awards.

In addition to support for initial fellowship training, diabetes research activities must be able to attract young biomedical investigators into the field. Those already involved in such research must encourage new investigators and alert them to available research opportunities. Support for additional training in diabetes for these individuals is essential if they are to continue to develop in their research careers in this area. The Commission therefore proposes substantial expansion of the Research Career Development Awards for current fellowship recipients and individuals holding doctorates who have completed equivalent training. These awards should be limited to a five-year period and should not be renewable. The Commission believes that after this training period, an investigator should be prepared to make significant and responsible contributions to diabetes research.

The Commission also believes that in order to ensure that the diabetes research community will continue to have a level of mature and highly experienced research investigators, a third level of research awards should be established. The Commission proposes that a limited number of Distinguished Scientist Awards be established which would be limited to ten years' duration and would not be renewable. The recipients would be drawn from those individuals who have demonstrated continuous and outstanding research productivity. Proposed legislation creating the Distinguished Scientist Awards is found on page 83.

The areas for which additional fellowships and special awards in the National Institute of Arthritis, Metabolism, and Digestive Diseases are most needed are in basic research on insulin and related hormones and on metabolic processes, etiology and epidemiology of diabetes, transplantation, microangiopathy, treatment of juvenile diabetes, obesity, and nutrition.

In the National Eye Institute, the fellowships and awards should be in the areas of diabetic retinopathy and basic physiological studies related to the eye.

In the National Institute of Neurological and Communicative Disorders and Stroke, the fellowships and awards should be in the fields of basic neurology or related neuro-sciences, with special emphasis on basic research relating to neural problems associated with diabetes.

In the National Institute of Dental Research, the fellowships and awards should be in dental science directly and in related disciplines such as microbiology, immunology, physiology, and biochemistry, with emphasis on problems relating to the dental complications of diabetes.

In the National Institute of Child Health and Human Development, the fellowships should be in the areas of obstetrics and gynecology, pediatrics, and neonatal biology; the special awards should be in the area of the perinatal problems of diabetes.

The following table represents a five-year projection for the recommended level of fellowship and special award positions, which would bring the manpower level into balance with the research needs in diabetes.

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Research Manpower - Positions

	FY	1975	1976	1977	1978	1979	1980
NIAMDD	Fellowship	43	63	73	83	93	103
	Research Career Development Awards	10	20	30	40	50	50
	Distinguished Scientist Awards	0	4	8	12	16	20
NEI	Fellowships	2	12	20	28	40	46
	Research Career Development Awards	0	3	6	9	12	15
	Distinguished Scientist Awards	0	1	2	3	4	5
NINCDS	Fellowships	0	2	4	6	8	10
NIDR	Fellowships	0	2	4	6	8	10
	Research Career Development Awards	0	1	2	3	4	5
NICHD	Fellowships	0	10	12	14	16	20
	Research Career Development Awards	0	5	6	7	8	10
	TOTAL	55	123	167	211	259	294

At the present time the Commission on Human Resources of the National Research Council, National Academy of Sciences, is deliberating regarding the manpower needs in the biomedical area. They are expected to identify areas of manpower needs which will dictate eligibility for National Research Service Awards in future years.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS TO THE COMMISSION ON HUMAN RESOURCES THAT IT TAKE COGNIZANCE OF THE CRITICAL NEEDS OF DIABETES RESEARCH IN IDENTIFYING THOSE AREAS ELIGIBLE FOR NATIONAL RESEARCH SERVICE AWARDS.

B. General Clinical Research Centers of the Division of Research Resources.

The General Clinical Research Centers (GCRC) were intended to serve as centers for clinical investigation which would supplement ongoing medical research activities in universities and hospitals so that the benefits of basic research could reach the nation's patient population as soon as possible. Five percent of the GCRC's total budget has been used for diabetes research, and this proportion could increase as more emphasis is placed on clinical research on diabetes by the National Institutes of Health.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS TO CONGRESS THAT IT INCREASE SUPPORT FOR THE GENERAL CLINICAL RESEARCH CENTERS TO ENSURE ADEQUATE RESOURCES TO MEET THE CLINICAL RESEARCH NEEDS OF DIABETES.

High quality clinical investigation of disease states requires an optimal environment in order to be successful. Attempts to conduct such clinical studies in general hospitals with patient beds scattered throughout an institution or even across a large geographical area have proved unsatisfactory. On the other hand, a single self-contained research unit can effectively and economically meet the needs of investigators studying a variety of problems associated with many diseases.

The GCRC program was established in 1960 with a $3 million appropriation from Congress. The primary goal of the GCRC program was the establishment of a resource for clinical investigation to:

- Increase knowledge of human physiology and pathophysiology by investigation of the epidemiology, etiology, progression, prevention, control, and cure of human diseases by studies in man.

- Provide an optimal setting for controlled studies by clinical investigators supported through NIH and other research support programs.

- Encourage and foster interdisciplinary interaction.

- Contribute to the maintenance of a national core of qualified clinical investigators.

- Develop technological and therapeutic advances through the expeditious translation of basic biological knowledge into effective patient care.

Clinical research within the General Clinical Research Centers has been hampered by a constant funding level since 1972. These fiscal constraints coupled with inflation have forced support for fewer centers and decreased the number of beds by 10% since 1972. Further reductions are anticipated in 1976. The GCRC now operates in two thirds of the nation's medical teaching institutions, supports 84 centers with 827 dedicated research beds and 1,800 full-time personnel, and pays 76% of the extramural research patient care costs funded by NIH. Funding limitations must not be permitted to limit the availability of this invaluable resource.

C. Research Resource Facilities

Special research resources such as colonies of animals with hereditary or spontaneous forms of diabetes, particularly those with the capacity to develop diabetic complications similar to those found in man, must be readily available to investigators in order to meet the needs of the diabetes research community efficiently and economically.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE APPROPRIATE INSTITUTES OF THE NATIONAL INSTITUTES OF HEALTH ESTABLISH RESEARCH RESOURCE FACILITIES TO MAINTAIN RESEARCH MATERIALS AND ANIMAL MODELS AND PROVIDE SERVICES NECESSARY TO MEET THE NEEDS OF DIABETES RESEARCH ECONOMICALLY AND EFFICIENTLY.

The greatest resource need in diabetes research at present is the need for maintenance of animal models. These animal models are especially useful in the areas of the genetics and etiology of diabetes. Only a few such models now exist. They are expensive to maintain, and no concerted effort to ensure their continued maintenance has been made. If insufficient funding should lead to the sacrifice of these

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existing colonies, not only would a valuable resource be lost for future investigation, but substantial prior efforts and dollars would be wasted. The Commission therefore proposes that the National Institute of Arthritis, Metabolism, and Digestive Diseases establish and administer an Animal Model Resource Facility to maintain and increase the experimental animal population necessary for diabetes research.

Another type of resource center now exists. The National Institute of General Medical Sciences has established a Human Mutant Cell Repository for the preservation and study of cell culture lines. A Diabetes Cell Collection has been established within this repository which represents a very significant resource for diabetes research.

As diabetes research continues and expands, the need for other centralized resource facilities will undoubtedly be identified. These should be established within the Institute most closely associated with the research projects that will utilize the resource.

D. Scientific Communication

Information on Ongoing and Proposed Research

An adequate information flow regarding ongoing and proposed research efforts is essential for the efficient and orderly progression of biomedical research.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS TO THE NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND DIGESTIVE DISEASES THAT IT REVIEW ALL AVAILABLE RESEARCH INFORMATION RESOURCES IN ORDER TO DEVELOP A SYSTEM TO PROVIDE A COMPLETE AND UP-TO-DATE SOURCE OF INFORMATION ON ONGOING AND PROPOSED RESEARCH RELATING TO DIABETES.

Diabetes research information is currently available to scientific investigators from many sources, including personal communication, scientific journals, the Diabetes Literature Index, and the Endocrinology Index. What is generally lacking, however, is a comprehensive source of information regarding ongoing and proposed research in diabetes and endocrinology. Such a resource would encourage communications among scientists working in related areas, minimize duplication of efforts, and provide stimulus and reinforcement for potentially fruitful ideas.

Several approaches currently exist that may suggest methods to solve this communications gap. These include the Smithsonian Science Information Exchange and existing computer information systems of the National Institutes of Health. All of these approaches should be explored in order to develop an economically feasible and practical mechanism to disseminate this necessary information on diabetes to the biomedical research community.

Workshops, Symposia, and Conferences

Personal intercommunication among scientists is also essential, not only with individuals working in the same area, but often on a broad interdisciplinary base. Thus, the Commission makes the following general recommendation:

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE NATIONAL INSTITUTES OF HEALTH ANNUALLY SPONSOR INTERDISCIPLINARY WORKSHOPS, SYMPOSIA, AND CONFERENCES ON DIABETES AND ITS COMPLICATIONS TO ENCOURAGE CROSS-FERTILIZATION OF IDEAS AND COOPERATIVE RESEARCH EFFORTS.

The complications of diabetes can have devastating effects throughout the body; often these effects, which are initiated by

or accelerated by the diabetic state, are similar to or indistinguishable from other well known disorders, i.e., blindness, nerve disorders, stroke, and heart attack. Research efforts related to diabetes cannot be narrowly confined to only one scientific discipline, or directed to the resolution of only one discrete medical problem. Scientific investigations cannot be carried out in isolation from research in other disciplines, even many seemingly unrelated. The cause of diabetes and its complications has not yet been delineated; thus there is an immediacy to increased research attention and, in particular, to a concentrated interdisciplinary approach.

The Commission recommends that a committee of the proposed National Diabetes Advisory Board be established to coordinate and promote interdisciplinary workshops, symposia, and conferences to encourage cross-fertilization of ideas and cooperative research efforts. It was particularly apparent during the workgroups which were held to develop the report on etiology and pathology that an interdisciplinary approach was of immense value. The Commission proposes to the many organizations concerned with diabetes research--the Institutes of the National Institutes of Health, the Fogarty International Center, and voluntary health agencies--that they have as part of their charge the sponsorship of such meetings. The Committee of the National Diabetes Advisory Board can serve both as catalyst and as focal point in bringing investigators from various research areas together. A great deal of very important research is conducted in many countries throughout the world; these proposed meetings should include appropriate scientists from other countries to share their ideas with scientists in the United States.

E. Additional Administrative Support

The foregoing recommendations for new and expanded research in diabetes will require additional Institute staff to administer and coordinate the proposed programs. Since the National Institute of Arthritis, Metabolism, and Digestive Diseases supports the bulk of diabetes-related research activities,

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS TO THE CONGRESS THAT THE STAFF OF THE NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND DIGESTIVE DISEASES BE INCREASED TO INCLUDE TEN NEW POSITIONS UNDER THE ASSOCIATE DIRECTOR FOR DIABETES AND FIVE NEW POSITIONS IN THE ADMINISTRATIVE MANAGEMENT STAFF OF THE INSTITUTE.

The staff of the Associate Director for Diabetes should be increased to include the following positions:

- One Special Assistant to the Associate Director
- One Analyst
- Two Grants Assistants
- Two Assistant Program Directors
- One Communications Assistant
- One Epidemiology Assistant
- Two Secretaries

The Administrative Management Staff of NIAMDD should be increased to include the following positions:

- Two Administrative Assistants
- Two Contract Expert Assistants
- One Secretary

Since the National Eye Institute is the focal point for all research relating to diabetic complications of the eye,

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- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS TO THE CONGRESS THAT THE STAFF OF THE NATIONAL EYE INSTITUTE BE INCREASED TO INCLUDE TWO PROFESSIONAL AND TWO CLERICAL POSITIONS IMMEDIATELY AND AN ADDITIONAL PROFESSIONAL AND CLERICAL POSITION IN FY1980 TO ACCOMMODATE THE INCREASED RECOMMENDED EMPHASIS IN DIABETES.

Additional responsibilities in diabetes have also been proposed for other Institutes.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS TO THE CONGRESS THAT THE STAFFS OF THE NATIONAL HEART AND LUNG INSTITUTE, THE NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT, THE NATIONAL INSTITUTE OF NEUROLOGICAL AND COMMUNICATIVE DISORDERS AND STROKE, AND THE NATIONAL INSTITUTE OF DENTAL RESEARCH EACH BE INCREASED TO INCLUDE ONE PROFESSIONAL AND ONE CLERICAL POSITION TO COORDINATE DIABETES-RELATED PROGRAMS.

The individuals filling these positions will not only provide needed administrative support for diabetes but will also serve as an identifiable focus for diabetes within each Institute. The existence of these positions should also substantially strengthen the Diabetes Mellitus Coordinating Committee and promote increased inter-Institute cooperation.

F. Funding Recommendations

It is important to understand how the funding recommendations were determined, and the philosophical approach which was taken in their development. In each of the areas specifically addressed in the preceding part of this component, workgroups were convened. The scientists participating were drawn not only from investigators in that specific area, but a deliberate effort was made to maintain an interdisciplinary approach. The participants were asked to identify needs and gaps, and to make recommendations relative to the needs, including indications of the magnitude of the problem identified in regard to funding. In each workgroup the manpower currently available was carefully assessed. Thus, the recommendations took into account research needs, research potential, and available manpower. From all of the information on these three parameters, budget estimates were derived. These appear in detail in the Program Funding Summary.

Although the specific budgetary recommendations are given corresponding to the areas of research discussed previously in this section, it was not the intention of the Commission that the appropriations be earmarked this tightly. Rather, they were presented in this way for guidance to the staff of the respective Institutes of the National Institutes of Health. Similarly, it was not intended that the five-year recommendations be rigidly adhered to, but that the Institutes should allocate their available resources in accordance with recommendations from their respective Advisory Councils in respect to program potentials that may develop before 1980.

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS TO THE CONGRESS THAT FUNDS FOR INCREASED DIABETES RESEARCH AND TRAINING PROGRAMS BE APPROPRIATED TO THE NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND DIGESTIVE DISEASES AND TO OTHER INSTITUTES AS DESCRIBED ABOVE AND IN THE PROGRAM FUNDING SUMMARY.

The Commission calls the attention of the Congress to the fact that, although specific funding recommendations have

not been made in respect to the National Institute of Aging, the National Institute of Allergy and Infectious Diseases, the National Cancer Institute, and the National Institute of General Medical Sciences, many programs in these Institutes are pertinent to diabetes and its complications. This is particularly true for the activities of the National Institute of General Medical Sciences through which support of basic studies in cell biology and genetics may provide clues to the eventual solution of the diabetes problem.

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III

DIABETES RESEARCH AND TRAINING CENTERS

This section of the Long-Range Plan to Combat Diabetes deals with the establishment over the country of Centers for Diabetes Research and Training as mandated by Public Law 93-354. It defines their purpose and functions and it contains four principal recommendations:

- To the Secretary of HEW, that the program for Diabetes Research and Training Centers is meritorious and should be implemented forthwith and according to guidelines proposed by the Commission;

- To the Secretary of HEW, that supervision of and responsibility for the Centers program be delegated to the Director of NIH, for the reasons stated;

- To the Congress, that P.L. 93-354 be amended with respect to the dates and duration of authorization for the Centers program; and

- To the Congress, that funds for Diabetes Research and Training Centers be duly appropriated.

Background for this section and its recommendations is included in Volume III, Part-A of this Report.

* * *

In accordance with the National Diabetes Mellitus Research and Education Act (Public Law 93-354) under the section entitled "Diabetes Research and Training Centers," the Commission has deliberated and debated the purposes and functions of such Centers in the Long-Range Plan to Combat Diabetes. Having so done, the Commission concurs with the intent of Congress as perceived, and makes the following recommendation:

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE SECRETARY OF HEALTH, EDUCATION, AND WELFARE IMPLEMENT FORTHWITH THE PROGRAM FOR "DIABETES RESEARCH AND TRAINING CENTERS" IN A MANNER CONSISTENT WITH GUIDELINES PROPOSED BY THE COMMISSION.

These guidelines, which follow, explicate the purposes, spirit, and intent of such Centers as conceived by the Commission; and the Secretary should be advised that these constitute "... applicable recommendations of the National Commission on Diabetes" with respect to the Centers program in compliance with the Act.

PURPOSE, SPIRIT, AND INTENT OF THE CENTERS PROGRAM

The Centers are charged with three principal functions:

1) Performance of the highest quality research in diabetes and its management.

2) Generation of the most competent professional personnel both for research in diabetes and for management of the diabetic.

3) Translation of advances in the field of diabetes research with least delay into improved care for the diabetic in the setting of model patient care demonstration units within the Centers and through out-reach programs to the regional community.

Training and education functions of the Centers are intended to follow in two

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related, though successive, phases: the earlier phase, in which emphasis is given to intensive training of research personnel and health professionals within the Centers and to development of innovative programs for patient and public education; then, a later phase in which the Centers, once matured and having generated the requisite professional personnel and having designed and evaluated training and education programs, begin to broaden their sphere of influence and effectiveness by developing out-reach programs for practicing health professionals through cooperation, coordination, and collaboration with all relevant local, regional, State, and Federal agencies. The ultimate objective of such out-reach programs is to improve the knowledge, skills, and attitudes of those caring for the diabetic and, thus, the care and quality of life of the diabetic in the United States.

Diabetes Research and Training Centers are in no sense intended to be a means of providing massive health care delivery systems for the diabetic population in America, either in the immediate or remote future.

CENTER ACTIVITIES

Diabetes Research and Training Centers are academically based, utilizing the facilities of a single university-affiliated medical center, or formed by a consortium of cooperating institutions including the university - affiliated center, and are designed to accomplish and promote the following five activities:

1) Basic and clinical research in the fields of diabetes and its management.

For the purposes of this section, the following definitions are in order: Research, whether basic or clinical, in education and/or treatment, means any bona fide hypothesis - testing or careful, systematic study or investigation undertaken to establish facts or principles. Management includes both diagnosis and treatment, and the latter implies education of the diabetic patient. In the care of the diabetic patient, emphasis is given to the "team approach." Diabetes here and throughout this section is to read: "diabetes mellitus and related endocrine and metabolic disorders and the complications from such disease or disorders."

2) Training of postdoctoral fellows for research in diabetes and its management.

3) Training of health professionals in diabetes and its management. Training in all instances is to imply training and education of the health professional, and health professionals include physicians and allied health personnel as well as students in either group.

4) Training of practitioners of the health professions in diabetes and its management in the form of continuing education and information programs.

5) A model training-education-treatment demonstration facility for diabetics in order to contribute to the above four areas of endeavor. The staff of this unit is to participate actively in the Centers' training programs.

ELIGIBILITY REQUIREMENTS FOR PROSPECTIVE CENTERS

The institution or consortium wishing to qualify for the Centers program and its support must have either:

1) active programs of excellence in each of the five areas designated above which, with Center support, can be substantially expanded; or

2) active programs of excellence in two or more of the areas above, of which a well-established, high-quality research program is an integral part. For those areas as yet undeveloped, a detailed and feasible plan for their development is considered an essential part of application for the Centers program.

Applications should, in addition, include a feasible long-range plan for the development of out-reach programs of education and training, if such are not yet in operation.

All applicants should have the full, enthusiastic endorsement and support of their sponsoring academic institution, and such commitment should be stated in writing in the application. The Center's plans must be internally consistent with the sponsoring institution's academic policies.

BUDGETARY CATEGORIES AND CENTER SUPPORT

A program's scope, spirit, and intent are reflected in those budgetary items both eligible and ineligible for funding. For this Centers program, the following are considered eligible for support:

1) Salary for key professional personnel engaged in research programs.

2) Salary for key health professionals engaged in training programs.

3) Salary for qualified physicians who act as clinical coordinators for the development and evaluation of research and training programs.

4) Salary for administrative personnel of the Center.

5) Supplies, equipment, and materials for Center-wide activities and services.

6) New research initiatives on a pilot basis until such projects or programs mature to the point of competing at the national level for research support through the established peer-review system. The duration of such support ordinarily should not exceed three years.

7) Funds for the development or expansion of the Center-based, model, training-education-treatment demonstration facility for the diabetic patient.

8) Patient care costs directly related to research.

9) Travel costs directly related to Center activities and services.

10) Other expenses clearly specified and directly related to Center activities and services.

By contrast, those items ineligible for support through the Centers program include:

1) Stipends for postdoctoral trainees.

2) Stipends for health professionals-in-training (i.e., medical students, nursing students, etc.)

3) Long-term support of basic research or clinical research programs or projects.

4) Patient care costs not related to research.

5) Diabetes detection programs.

For those items ineligible for support and to strengthen the overall program, Centers are encouraged to develop a multiplicity of funding and financial support through all applicable Federal agencies, State and local sources, charitable donations and the foundations, and through

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third-party payment for patient care services.

AUTHORITY FOR THE CENTERS PROGRAM

Public Law 93-354 directs the Secretary of Health, Education, and Welfare to provide for implementation of the Diabetes Research and Training Centers program in a manner "...consistent with applicable recommendations of the National Commission on Diabetes..." Because the Commission considers the research mission of proposed Centers to be so important and because, within HEW, the National Institutes of Health and the Division of Research Grants provide the best peer review system for evaluation of research proposals, the Commission makes the following recommendation:

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE SECRETARY OF HEALTH, EDUCATION, AND WELFARE DELEGATE THE RESPONSIBILITY FOR AND SUPERVISION OF THE PROGRAM FOR DIABETES RESEARCH AND TRAINING CENTERS TO THE DIRECTOR OF THE NATIONAL INSTITUTES OF HEALTH.

TIMETABLE FOR IMPLEMENTATION OF THE CENTERS PROGRAM

Because of the magnitude of the diabetes problem and the urgent need in this country for more diabetes manpower, Diabetes Research and Training Centers should be established with all deliberate speed. The Commission takes the stand that this Centers program can and should be fully operational inside of five years, and that the first Centers should be activated within about 18 months after the delivery of this report to the Congress.

Thus, the Commission considers the following timetable reasonable and advises the Secretary of Health, Education, and Welfare (and the Director of NIH) that it should be so regarded and considered part of the guidelines for implementation of the Centers program, i.e., one of the Commission's "... applicable recommendations."

January 1976 -- Initiation of the procedures within HEW by which regulations for such a program are formulated, reviewed, and approved, prior to...

July 1, 1976 -- Announcement of the program for Centers through promulgation of the RFA's ("Request for Applications") to the country's medical centers.

October 1976 -- First deadline for receipt of applications. The receipt dates thereafter are February, June, October, and so on, to conform to the Revised Review Schedule of NIH to become effective January 1, 1976, all of which is to conform to the change in the Federal fiscal year on October 1, 1976.

February 1977 -- Peer review by Special Study Section for the Centers program.

May 1977 -- Action by the Advisory Council of NIH.

July 1, 1977 -- Activation of the Centers program through funding of the initial Diabetes Research and Training Centers. Thereafter, the activation of subsequent Centers is incremental with the expectation to reach the full complement of Centers by...

July 1, 1979 -- or shortly thereafter, with approximately 15 Centers in operation.

The proposed incremental increase over the first three years is based on the immediate lack of sufficient diabetes manpower for all the proposed Centers in the

first year or so, and the total of 15 Centers is the best estimate of manpower generation potential of such Centers along with the projected manpower requirements of the country. All other considerations being equal, these Centers are to be geographically dispersed in the United States and its Territories based on population density.

PROJECTED BUDGETARY NEEDS AND THE CENTER AWARDS

Based upon the best estimates of projected fiscal requirements for Centers having this broad a program, the recommended support for each Center is approximately $1 million per year.

The Center award should commit support for five years with annual review and evaluation of progress. Thereafter, support may continue with competitive renewal every five years.

For the projected 15 Centers, activated incrementally over the first three years, the estimated total budget for the Centers program for the first five-year period is as follows:

Direct Costs for the Fiscal Year Ending	
September 30, 1977	$ 5,000,000
September 30, 1978	10,000,000
September 30, 1979	15,000,000
September 30, 1980	15,000,000
September 30, 1981	15,000,000

After correction for indirect costs, the figures are as follows:

Total Costs (Including Direct Costs) for the Fiscal Year Ending	
September 30, 1977	$ 8,000,000
September 30, 1978	12,000,000
September 30, 1979	20,000,000
September 30, 1980	20,000,000
September 30, 1981	20,000,000

The Commission therefore makes the following recommendations:

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS TO THE CONGRESS THAT THE SECTION OF PUBLIC LAW 93-354 ON "DIABETES RESEARCH AND TRAINING CENTERS" DEALING WITH AUTHORIZATION FOR APPROPRIATIONS BE AMENDED TO READ AS FOLLOWS:

"c) There are authorized to be appropriated to carry out this section $8,000,000 for fiscal year ending September 30, 1977, $12,000,000 for fiscal year ending September 30, 1978, $20,000,000 for fiscal year ending September 30, 1979, $20,000,000 for fiscal year ending September 30, 1980, and $20,000,000 for fiscal year ending September 30, 1981."

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS TO THE CONGRESS THAT APPROPRIATION OF FUNDS FOR "DIABETES RESEARCH AND TRAINING CENTERS" BE MADE IN CONFORMANCE TO THE AFOREMENTIONED RECOMMENDED AMENDMENT DEALING WITH AUTHORIZATION FOR APPROPRIATIONS.

DIABETES RESEARCH AND TRAINING CENTERS AND THE LONG-RANGE PLAN

Diabetes Research and Training Centers have the dual mission of contributing to the search for the eventual cure and prevention of diabetes through research, and of contributing to the better care and quality of life for those with diabetes awaiting cure. The latter charge is met both through basic and clinical research and through training of sufficient numbers of highly capable, qualified health professionals who care for patients with diabetes in this country. In a sense, these Centers are to play a major role in generating the

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necessary diabetes manpower for research and for clinical care as part of the Long-Range Plan.

Training implies the generation of new manpower and the improvement of existing manpower. Both are urgently needed, and to accomplish the latter, the Centers are expected to develop plans for community and regional interaction in cooperation with the Center for Disease Control; in collaboration with all relevant municipal, county, and State health agencies and medical associations; and in coordination with the appropriate voluntary health agencies.

IV

DIABETES HEALTH CARE, EDUCATION, AND CONTROL PROGRAM ACTIVITIES

This component of the Long-Range Plan recommends those steps to be taken by a wide variety of Federal and non-Federal agencies and organizations to improve the health care of people with diabetes until a prevention and cure are discovered. Commission members met extensively with workgroups in an attempt to identify specific needs and approaches for education, treatment, and control of diabetes. The needs of the health professional, the patient, and the patient's family became clearly evident. Improved education for each of these groups is needed so that advances in treatment may be translated into effective action as they become available from diabetes research. It did not seem appropriate to the Commission to recommend specific modes of treatment or specific topics for education, but rather to attempt to develop mechanisms which, if utilized, would transmit the current knowledge and future advances in diabetes to all those involved in the care of patients with diabetes.

This plan will build on the existing resources, facilities, and expertise available through the Center for Disease Control, the Veterans Administration, other Federal agencies, and pertinent non-Federal institutions and organizations. The principal parts of this section promote the improvement of education and treatment through a series of activities which should be monitored and coordinated by the National Diabetes Advisory Board.

- The rapid translation of research into practice.

- The emphasis of patient education as an integral part of treatment.

- The recognition of the need and validity of research studies into the evaluation of modes of treatment.

- The establishment and support of local diabetes control programs.

- The creation of a central resource to systematically evaluate existing professional, patient, and public education materials, and to coordinate development of new materials.

This last resource will be expected to promote appropriate health care practices in diabetes treatment by the health professional, the patient, the payers for health care, and the public at large. Practically every segment of our population can benefit by one or several of these programs.

CENTER FOR DISEASE CONTROL

Diabetes Control Program

A major part of the fourth component of the Plan is the establishment of a series of state or more locally based diabetes control programs under the sponsorship of the Center for Disease Control. A program for disease control and health care delivery is particularly beneficial when coordinated with other approaches recommended by the Commission since this concept involves local programs serving defined geographic areas and provides a realistic feedback mechanism to the planner, researcher, and practicing physician. Furthermore, the Commission, in its deliberations, recognized the intent of the Congress in Section 4, "Diabetes Mellitus Prevention and Control Programs," of the National Diabetes Mellitus Research and Education Act (Public Law 93-354). Therefore,

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- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE SECRETARY OF HEALTH, EDUCATION, AND WELFARE IMPLEMENT IMMEDIATELY DIABETES CONTROL PROGRAMS IN A MANNER CONSISTENT WITH GUIDELINES OUTLINED IN THIS PLAN.

Purposes of the Control Program

All activities and programs related to this Long-Range Plan are directed ultimately at the cure, prevention, and control of diabetes. However, the Commission agrees with the intent of Congress that there should be special provision also for program responsibilities for Diabetes Control. Such a program would provide for coordination and communication among organizations and agencies at national, state, and local levels in efforts to evaluate and improve delivery of health services to the patient with diabetes and his family. The program would similarly effect regular communication and coordination between the control programs, Research and Training Centers, and other segments of the Long-Range Plan. In this manner, new research findings and improved methods of care delivery will more rapidly reach the patient with diabetes and his family.

Such a program can be accomplished by the development of a public health oriented diabetes control program with the following objectives:

1) To identify, strengthen, and incorporate existing resources into a concerted effort to make health services more accessible to the diabetes patient and family.

2) To assist with planning, coordination, and evaluation of programs for improving delivery of health services.

3) To develop a data base for evaluating the delivery of services and measuring the impact of control efforts upon morbidity and mortality from diabetes and its complications.

4) To develop and maintain a registry of local and national diabetes control program resources.

5) To cooperate, collaborate, and communicate with other agencies and organizations at the national and local level concerned with research and service.

It is the conclusion of the Commission that the Center for Disease Control (CDC) has the interest, competency, and experience to develop a program which will fulfill these objectives. The CDC program will be based upon fostering a series of state or more locally based diabetes control programs with technical consultation and administrative support provided by CDC headquarters staff. These local programs will provide a coordinative function among health agencies and organizations at the local level; compile data about programs, services, and resources for use at local and national levels; and conduct or participate in studies of etiology and program evaluation. The development of these local programs will also provide settings to conduct investigations, studies, and other activities related to diabetes.

The participation by CDC in such studies would include:

1) Evaluation and dissemination of training and educational materials and methods.

2) Documentation and investigation of unusual disease patterns reported by the community programs (e.g., juvenile diabetes case clusters, areas of excess morbidity or mortality).

3) Consultation regarding design and conduct of epidemiologic studies

from existing or specially developed data from the locally based programs.

4) Laboratory consultation and support in planning and conducting these studies.

5) Evaluation of screening methods, techniques, and follow-up mechanisms.

In addition to CDC participation, these settings can be used by the Research and Training Centers in their activities and by other investigators according to their requirements.

Responsibility for organizing a state or local diabetes control program will rest with a diabetes program adviser assigned by CDC to the state or local health agency. Alternatively, an agency may assign one of their own staff to the program. In either case the staff person will maintain continued working relationships with CDC. The responsibilities of the local program will include:

1) Developing and maintaining a control program resource registry.

2) Compiling information from local resources concerning utilization of services, costs, and program effectiveness.

3) Disseminating information about these resources to patients, physicians, health departments, and others.

4) Determining areas of excess diabetes morbidity and mortality in the state, countries, or other local subdivisions.

5) Assisting in planning, coordinating, and evaluating intervention programs needed to improve delivery of services.

6) Sending locally collected data to CDC for compilation, analysis, and dissemination.

7) Organizing an advisory group composed of representatives from the medical societies, universities, health departments, and representatives of the voluntary health agencies and other appropriate local organizations.

As community needs dictate, other elements will be added to the local programs, utilizing either existing community resources or new funds and staff when available. These elements include:

1) Nutrition counseling.

2) Public, patient, and family education.

3) Psychological support.

4) Physician information and education.

5) Patient and family outreach.

These community diabetes control programs will develop data and information which when compiled at CDC will be important to the Long-Range Plan. This will include specially collected morbidity and mortality data and information concerning program resources, exemplary methods of health care delivery to diabetes patients and families, and unusual disease patterns deserving special epidemiologic investigations. The Center for Disease Control will routinely compile and disseminate such data. The CDC will coordinate program activities with Federal and non-Federal institutions concerned with the range of research, control, and educational activities. A ready exchange of information to the local programs will take place through annual conferences, information exchange services, and direct consultations regarding various phases of the work. The CDC will also participate in the establishment

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of a national clearinghouse for educational and training materials. In collaboration with the appropriate institutions, procedural guidelines will be developed to promote standardized data collection, program evaluation, and characterization of program resources.

The CDC will also provide for the national diabetes program laboratory support for virologic studies and technical consultations for maintaining laboratory quality control, reference standards, and development and evaluation of reference and routine methods for the determination of diabetes-related laboratory tests. In addition, CDC staff will provide consultative assistance to the community and other programs regarding surveillance, case registries, epidemiologic studies, education, and training of public health and other allied health professionals.

The CDC diabetes program will also involve a diabetes consultant committee to provide technical consultation on program content, priorities, and effectiveness; needs for special program efforts or new studies; and other recommendations regarding the diabetes effort. The committee will be composed of persons from public health, research, and clinical backgrounds, selected to represent a variety of Federal and non-Federal institutions. The committee would also include representatives from consumer and voluntary health organizations and from the proposed National Diabetes Advisory Board. Further participation in other projects supporting the national diabetes effort will require staff and funding beyond the levels proposed below.

Authority for the Prevention and Control Program

Public Law 93-354, amending Sec. 4, Section 317 of the Public Health Service Act, thereby broadened CDC responsibilities to "communicable and other diseases" and changed subsection (h) (1) by inserting "diabetes mellitus and Rh disease and ..."

In view of these changes, and because the Commission considers important the participation of CDC in the Long-Range Plan to Combat Diabetes,

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE SECRETARY OF HEALTH, EDUCATION, AND WELFARE DELEGATE THE RESPONSIBILITY FOR THE SUPERVISION OF THE PROGRAM FOR "PREVENTION AND CONTROL OF DIABETES" TO THE CENTER FOR DISEASE CONTROL.

Timetable for Implementation of the Diabetes Control Program

Because of the considerable gap between what is good care and management of diabetes patients and what is currently available to a significant segment of the U.S. population, the Commission recommends immediate implementation of this program. Organization and staffing of the CDC portion of the program will take time and must precede inauguration of the community programs. The Commission also recognizes that the program will be best developed in phases, allowing for progressive operational experience beginning with a modest number of pilot projects before extending to a nationwide program.

Thus, the Commission recommends that the Diabetes Control Program be implemented in three phases over a five-year period. The following timetable of work is considered reasonable and should be considered part of the guidelines for implementation of the CDC program.

Phase 1 (Fiscal Years 1977 and 1978)

Recruitment of CDC headquarters staff.
Development of community contract guidelines.
Contract procurement.
Recruitment and training of diabetes program advisers.

Implementation of 20 diabetes control program pilot projects.

Phase 2 (Fiscal Year 1979)

Implementation of 20 additional community programs.
Beginning of conversion to grant funding mechanism.

Phase 3 (Fiscal Years 1980 and 1981)

Total conversion to grant funding mechanism.
Implementation of up to 20 additional programs with nationwide coverage.

Projected Budget and Staffing Needs

Funding and staffing of the control program will include CDC Headquarters and community programs. Funding of community programs in the first phase will be done through the contract mechanism. For the second and third phases, and on a continuing basis, community program funding will be by grants as authorized by recent amendments to Sec. 4, Section 317 of the Public Health Service Act. For both funding mechanisms the support for each State or local diabetes program will be at a level of $150,000 per year.

Projected total annual costs of the community programs for the first five-year period are as follows:

Fiscal Year	Number of Programs	Cost
1977	10	$1,500,000
1978	20	3,000,000
1979	40	6,000,000
1980	60	8,000,000
1981	60	8,000,000

Annual costs of the CDC Headquarters portion for this same period are given below.

1977	$ 2,100,000
1978	2,100,000
1979	2,400,000
1980	2,600,000
1981	2,600,000

The Commission also takes note that the Center for Disease Control requires added personnel positions for support of this program. These requirements are as follows:

Fiscal Year	Community Programs	Headquarters	Total
1977	10	40	50
1978	20	40	60
1979	40	45	85
1980	60	50	110
1981	60	50	110

Therefore,

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS TO THE CONGRESS THAT FUNDS AND STAFF POSITIONS BE APPROPRIATED IN CONFORMANCE WITH THE PRECEDING REQUIREMENTS OF THE CENTER FOR DISEASE CONTROL FOR IMPLEMENTATION AND CONTINUATION OF A DIABETES PREVENTION AND CONTROL PROGRAM.

VETERANS ADMINISTRATION

The Veterans Administration (VA) hospitals constitute the largest single health care system in the United States, with 169 hospitals providing 95,544 hospital beds.

At present, more than 13 million veterans have reached the age at which diabetes mellitus occurs with the greatest frequency, and over the next 20 to 30 years another 16 million veterans will be at high risk. Diabetes already represents

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a major disease entity in the VA in that of 827,245 hospital discharges in FY 1974, 67,290, or 8.1%, were diabetics. This number of patients discharged with the diagnosis of diabetes is twice that noted for non-Federal short-stay hospitals. Despite the increasing incidence of this disease in the VA population, diabetes research in the VA during FY 1975 accounted for about 3.3% of the total research budget, down from over 4% in FY 1973.

Approximately 15,000 patients with diabetes occupy beds in the VA hospital system, and several times that number are cared for on an out-patient basis. This constitutes the largest number of patients with this disease who are being managed within a single system, and thus is a unique resource for the description of the natural course of the disease and for the determination of the effectiveness of present and future modes of therapy. The comprehensive nature of the care available (medical, surgical, dental, dietetic, nursing, etc.) within a single system, and the absence of economic constraints on the patient, add to the potential of this system as a model for the administration and evaluation of optimal care.

The VA has also fostered biomedical research of the pathogenesis and management of diabetes and related disorders and has a large pool of physician researchers working in the field, many of them renowned. This environment is excellent for training new experts in all phases of diabetes, i.e., research, treatment, and education. Also, the training of physicians and other members of the health team is a traditional role of the VA system; about one-third of American physicians receive their training in this hospital system. Because the VA hospital system is an extensive resource already oriented toward diabetes research and treatment,

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE ADMINISTRATOR OF THE VETERANS ADMINISTRATION INCREASE THE PROGRAMS OF THAT AGENCY IN THE AREAS OF RESEARCH, EDUCATION, AND TREATMENT IN DIABETES.

The Commission believes the following special programs should be considered by the Veterans Administration:

- Establishment of Special Units for the Development of New Modes of Therapy for Diabetes. These units, of which 6 - 10 are suggested, are envisioned as in-hospital facilities developed as clinical extensions of basic research programs in qualified VA stations with the required facilities, scientific expertise, and patient population. Many VA hospitals, particularly those affiliated with medical centers, have unique facilities for these important studies.

- Cooperative Studies of the Efficacy of Present Modes of Therapy for Diabetes. Because of its health manpower and patient population, the VA has a unique capability for studying the value of available treatment. Data are lacking on the efficacy of present modes of therapy. The value of careful control of hyperglycemia, the use of oral agents, the effectiveness of patient education programs, and the role of various therapies in eye and kidney diseases are examples of issues awaiting critical testing.

- Manpower Training in Diabetes (Medical and Paramedical). Very few facilities in which diabetic patients receive care have the full range of experts necessary for comprehensive management of the disease. Equally disturbing is the lack of

programs to train specialists in diabetes research and treatment. The VA brings together a long tradition of training of health personnel and a position of leadership in diabetes research. The large number of physician-scientists in the VA who have made important contributions to the field of diabetes is a valuable foundation for training programs. At this crucial point in time, the VA should reaffirm its commitment to specialty training.

• Project Research in Diabetes. Trends during the past few years indicate a steady level of funding for project research in diabetes and an absolute decrease due to inflation. The ability to develop new programs to develop, test, and implement research in diabetes by the VA is ultimately dependent on increased funding for research.

• The Commission recommends to the Administrator of the Veterans Administration that the funds for these diabetes programs should not come out of, nor compete with, the general Veterans Administration budget but should be additional funds specifically designated within the Veterans Administration's budget request to the Congress.

Budget Recommendations

Program	Cost/Year ($ in thousands)				
	FY1976	FY1977	FY1978	FY1979	FY1980
Special Units	$ 298	$ 591	$ 861	$1,179	$1,500
Cooperative Studies	126	249	363	498	640
Manpower Training	79	157	229	314	400
Project Research	160	314	458	628	800
	$ 663	$1,311	$1,911	$2,619	$3,340

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FEDERAL AND STATE RESOURCES FOR DIABETES EDUCATION AND TREATMENT

Other Federal programs do reach, directly or indirectly, many people with diabetes and their families, friends, employers, and those who treat individuals with diabetes. These programs can have a strong impact on diabetes with almost no additional financial resources, provided that an increased focus on the treatment of diabetes can be developed.

These programs, available through the Health Services Administration, the Health Resources Administration, the Alcohol, Drug Abuse, and Mental Health Administration, the Social and Rehabilitation Service, the Social Security Administration, the Department of Defense, and the Department of Agriculture, already have existing priorities and resource commitments. In light of the needs of diabetes, the Commission believes these agencies should include diabetes as a priority in their programs, and that the National Diabetes Advisory Board should monitor and coordinate these efforts.

The Commission has determined that currently within the Federal Government, and particularly in the Department of Health, Education, and Welfare, there are resources available to help meet many of the needs of the patient with diabetes. To date, these resources often have not been clearly identified and therefore have not been utilized to their fullest extent by health care professionals, the patient with diabetes, his family, or the general public.

The Commission believes a complete inventory should be developed which includes a detailed analysis of each program, and this inventory should be made available to all individuals interested in diabetes. Therefore,

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS TO THE SECRETARY OF HEALTH, EDUCATION, AND WELFARE THAT EACH AGENCY DIRECTOR BE INSTRUCTED (1) TO PREPARE A REPORT WITHIN SIX MONTHS WITH (a) COMPLETE LISTS OF SERVICES AND RESOURCES AVAILABLE IN HIS AGENCY TO MEET THE NEEDS OF THE PATIENT WITH DIABETES AND WITH (b) PROPOSALS OF HOW THESE AND ADDITIONAL RESOURCES MAY BE USED FOR DIABETES IN LIGHT OF THE LONG-RANGE PLAN TO COMBAT DIABETES, AND (2) TO PRESENT THE REPORT TO THE SECRETARY AND TO THE NATIONAL DIABETES ADVISORY BOARD.

There currently exists within the Department of Health, Education, and Welfare broad general authority to include diabetes components within most existing Federal and Federally funded health programs. Such authority itself, however, does not ensure that such a component will actually be found in a particular program nor that the resources of that program will be available to help meet the needs of the patient with diabetes. Meanwhile, the Commission has identified specific resources presently available in a number of Federal programs that could be utilized for diabetes education and treatment. Therefore,

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE ASSISTANT SECRETARY FOR HEALTH ADVISE THE AGENCIES OF THE PUBLIC HEALTH SERVICE TO ADDRESS THE PROBLEM OF DIABETES ACCORDING TO THE SPECIFICATIONS SET FORTH IN THIS SECTION.

- All appropriate agencies of the Public Health Service should include diabetes experts on advisory bodies and peer review panels.

- Regional Offices should assist in the development of state plans for diabetes control and diabetes control components of

general state health plans. It is recommended that two workshops be sponsored each year in each region for the purpose of developing, implementing, and reviewing state plans and programs in the field of diabetes and that approximately $200,000 per year be allocated for this purpose.

Health Services Administration

• All plans submitted to the bureaus of the Health Services Administration for direct patient programs and grant support programs should include an approach to assessing the needs and providing for the care of the diabetic population.

• The Bureau of Quality Assurance, through the Professional Standards Review Organization, should develop medical care evaluation studies, criteria, and continuing education programs to reflect the improved treatment methods available in diabetes. It is recommended that a nationwide medical care evaluation study similar to the hypertension model be investigated in an attempt to stimulate the acceptance and use of quality assurance programs for the management of diabetes.

• The Indian Health Service should continue its cooperative efforts with NIH to study the epidemiology of diabetes in special Indian populations, and should review its overall health care programs to ensure that they adequately address the specific needs of Indians with diabetes.

Health Resources Administration

• The National Center for Health Services Research should encourage:

1) The development and evaluation of educational materials for patients and providers.

2) The development and evaluation of innovative systems and methods of delivery of health care services for individuals with diabetes.

• The Bureau of Health Planning Resources Development should encourage:

1) Each State Health Systems Agency and its area-wide subdivisions to develop a needs analysis and an implementation plan for diabetes education and treatment.

2) Each Regional Medical Program to establish a representative task force to develop a state-wide approach to diabetes and to develop guidelines to implement such an approach.

3) Each state and area-wide planning council to include providers and consumers representing the diabetes community in its membership.

• The Bureau of Health Manpower should encourage Area Health Centers to develop programs to provide continuing diabetes education for physicians and allied health personnel and programs to improve patient education.

• The Office of Health Resources Opportunity should assist disadvantaged persons and minorities in obtaining access to optimal diabetic care resources.

• The National Center for Health Statistics should continue its efforts to improve the quality and timeliness of diabetes morbidity and mortality data in all data collection systems it sponsors or advises, and should support the activities of the National Diabetes Data Group (described subsequently in this report and in Vol. III, Part 6D).

The National Library of Medicine

• The National Medical Audio - Visual Center of the National Library of Medicine should develop and evaluate new educational materials relating to diabetes.

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Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA)

- The National Institute of Mental Health of ADAMHA should give special emphasis to programs in the following areas:

  1) Research efforts to examine the role of emotional aspects of diabetes on individuals, family, and community.

  2) Training programs to prepare psychiatrists, psychologists, and psychiatric social workers to deal with the specific psychological problems associated with diabetes.

  3) Psychological counseling services through the more than 500 Community Mental Health Centers to meet the specific needs of children with diabetes and their parents.

  4) Information dissemination on diabetes by the Alcohol, Drug Abuse, and Mental Health Administration's clearinghouse, e.g., annotated bibliographies on scientific literature relating to mental illness and alcohol or drug abuse and diabetes.

Agencies other than the Public Health Service also sponsor programs which could significantly benefit the diabetic community.

Social and Rehabilitation Service

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE SOCIAL AND REHABILITATION SERVICE (SRS) ENSURE THAT APPROPRIATE SERVICES ARE AVAILABLE TO THE UNDERSERVED POPULATION WITH DIABETES FOR WHICH THE AGENCY PROVIDES SUPPORT.

- The SRS guidelines for reimbursement for patients with diabetes should be modified to ensure that all elements of patient education expenses are included as reimbursable elements of patient care.

- Uniform guidelines should be developed to include individuals with diabetes within the definition of eligible beneficiaries for those social, rehabilitative, medical, and other service programs administered by the SRS.

- All state plans submitted to the SRS should include a diabetes component to reflect the needs of the population to be served (e.g., nutrition and dietary services).

Social Security Administration

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE SOCIAL SECURITY ADMINISTRATION MODIFY THE GUIDELINES FOR REIMBURSEMENT OF PATIENTS WITH DIABETES TO ENSURE THAT ALL ITEMS OF PATIENT EDUCATION EXPENSES ARE INCLUDED AS REIMBURSABLE ELEMENTS OF PATIENT CARE.

It has long been recognized by the health care professional that a well-educated patient -- a patient who understands his disease, his limitations, and his health care needs -- is the most important factor in developing a good treatment pattern, especially in a chronic illness. The incidence of hospitalization, complications, and sequelae can be markedly reduced by the use of patient education to improve treatment.

Through Medicare and other programs, the Social Security Administration is in a position to influence directly and indirectly the treatment received by patients with diabetes.

The regulations and guidelines developed by the Social Security Administration have an impact on all levels of diabetes patient care. Perhaps the most important negative factor at this time is the policy not to include all patient education for diabetes as a reimbursable item to be covered for payment by Medicare.

Department of Defense

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE DEPARTMENT OF DEFENSE REVIEW ITS PROGRAMS IN THE LIGHT OF THE RECOMMENDATIONS FOR OTHER FEDERAL AGENCIES IN THE LONG-RANGE PLAN.

The medical facilities of the Department of Defense constitute a major and fully comprehensive health care system in the United States which serves active duty and retired military personnel as well as their dependents, and therefore serves a significant segment of the population.

- The Department of Defense should undertake systematic reviews of its service, education, and biomedical research programs parallel to those recommended for HEW agencies to assure that those programs adequately reflect the magnitude of the challenge presented by diabetes.

- The Department of Defense should also adopt diagnostic and treatment standards and develop and support educational programs (medical and paramedical) comparable to those recommended in the Commission report for other components of the country's health care and education system.

Department of Agriculture

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE DEPARTMENT OF AGRICULTURE EXPAND ITS INTRAMURAL RESEARCH PROGRAMS ON NUTRITION FOR THE DIABETIC POPULATION, AND ORIENT ITS EXTENSION SERVICE TO DISSEMINATE HEALTH EDUCATION INFORMATION, ESPECIALLY ABOUT THE IMPORTANCE OF DIET, NUTRITION, AND FOOD PREPARATION AS A PART OF DIABETES TREATMENT.

The primary missions of the United States Department of Agriculture (USDA) are to safeguard a continuous, reliable supply of wholesome food for the American consumer and to provide appropriate nutrition education and information to ensure the proper utilization of the available foods.

It has been well documented that certain nutritional factors have a strong relationship in the development of diabetes. The risk of diabetes is increased about two-fold in mildly obese people, about five-fold in moderately obese people, and more than ten-fold in very obese people. Also, in obese persons with diabetes, the condition of hypoglycemia and ease of control are significantly improved by weight reduction, thus suggesting that weight loss is a key element of self-therapy.

The intramural research of the USDA into diabetes nutrition focuses on the definition of human nutrient requirements which, when met, contribute to the maintenance of normal glucose metabolism. This research, therefore, plays an important part in the prevention and control of diabetes and should be intensified.

In addition, large, rural population groups do not have access to the sophisticated indepth medical care available in the metropolitan areas of this country. The United States Department of Agriculture, through its Extension Service, is in a unique position to provide a wide range of services to a portion of the population that the Commission has determined to be medically underserved. Listed below are the USDA's broad objectives for the general population; they could be beneficially oriented toward the population with diabetes.

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- To identify the nutrient requirements of man for optimal health and to define foods and diets that meet these requirements.

- To communicate to the public guidelines for nutritional habits for optimal health.

- To monitor food consumption patterns to assess their adequacy in relationship to the recommended dietary allowances.

- To provide food and meal programs to assure an adequate nutrient intake for population groups at risk because of age or economic circumstances.

In light of the significance of obesity to diabetes, a particularly important service the USDA can provide is the wide dissemination of information to the population it serves about the importance of diet, nutrition, and weight control.

EDUCATION

Treatment, or management, of diabetes has special requirements because it is daily, endures for a lifetime, and is largely administered by the diabetic patient himself. Treatment pervades the patient's daily life -- diet, exercise, urine testing, self-administered injections of insulin or oral medications. Regularly and properly administered treatment can regulate the effects of diabetes well enough for the patient to lead an active life, with only rare crisis events (coma or insulin reaction) of diabetes, few hospital admissions, and decreased risk of the complications of the disease. Lack of proper management results in repeated crises, high risk of death, chronic complications, restricted activities, and damaging psychosocial effects for the person with diabetes.

In view of the significant and crucial benefits to the person with diabetes derived from appropriate patient-administered treatment, it would seem that self-therapy would be widely promoted and carefully adhered to. Yet, the socioeconomic circumstances of medical care and of diabetes are such that ignorance of proper treatment prevails not only among patients with diabetes and their families, but also too often among health professionals responsible for the delivery of health care to these patients.

Diabetes, though one of the leading causes of death from disease, still receives minimal and insufficient attention in medical schools and on medical board examinations. Manpower in diabetes is severely short; use of allied health personnel is still significantly limited. The patient often does not receive instruction in self-therapy and there are few follow-up programs. Furthermore, the public on the whole is uninformed about diabetes and consequently (and usually unwittingly) exerts undue pressures on those with diabetes through prejudice, fear, and exclusionary practices.

While the treatment methods of diabetes need to be improved through research, the existing therapy for diabetes is neither as optimally nor as widely applied as it should be by the health professional and the patient. Education of the health professional and patient is the principal means of getting this scientific knowledge into practice quickly. Other parts of the Long-Range Plan -- the Center for Disease Control, the Veterans Administration, and the Diabetes Research and Training Centers -- address education programs as a part of their activities; however, these programs reach only a small number of the health professionals, patients, and public who should be influenced. Therefore, the Commission must recommend a comprehensive program addressed to a variety of Federal and non-Federal organizations to reach the majority of the diabetes community.

A guiding principle that pervades the Committee and Workgroup reports, and which the Commission believes to be the cornerstone of good treatment practice, is the acceptance by the health professionals, patients, and their families that, for diabetes, patient education is treatment. All education programs directed to the health professional, patient, and public should accept and promote this premise. Therefore,

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS TO THE ENTIRE DIABETES COMMUNITY THAT PATIENT EDUCATION BE CONSIDERED AN ESSENTIAL ELEMENT OF TREATMENT AND THAT ALL RELATED ACTIVITIES SHOULD PROMOTE THIS KEY CONCEPT.

THE NATIONAL DIABETES INFORMATION AND EDUCATION CLEARINGHOUSE

Prominent in the Commission deliberations was the repeated need for a central source of information for education programs related to diabetes. Therefore,

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THE ESTABLISHMENT OF A NATIONAL DIABETES INFORMATION AND EDUCATION CLEARINGHOUSE AS THE PRIMARY MEANS OF ADDRESSING THE NEED FOR A CENTRAL RESOURCE FOR EDUCATIONAL MATERIALS AND INFORMATION.

The Clearinghouse is a response to the multiple needs for education in diabetes for the health professional, the patient and his family, and the public, and it is a fulfillment of the Plan's responsibility described by Congress in the National Diabetes Mellitus Research and Education Act "to advance activities of patient education, professional education, and public education" through the collection, analysis, and dissemination of needed information in the prevention, diagnosis, and treatment of diabetes mellitus.

The Clearinghouse, as a central resource agency, will have several functions, each of which will be applied to all three segments of the diabetes-related population: the health professional, the person with diabetes and his family, and the public.

Its functions will be to:

- Conduct national surveys of health care providers and consumers to assess their attitudes, knowledge, and behavior regarding diabetes and its management, and to identify education needs.

- Identify and collect informational and educational materials available on diabetes.

- Assess the effectiveness of existing materials and identify the gaps between knowledge and resources.

- Develop vehicles for disseminating information about existing effective materials and their sources in cooperation with the Center for Disease Control, the Diabetes Research and Training Centers, and non-Federal organizations.

- Promote the development of (and develop, if necessary) educational materials and programs to fill the educational needs identified in the above assessments.

- Recommend development of specific materials to Federal and non-Federal organizations, publishers, pharmaceutical companies, etc.

- Promote communication, coordination, and distribution of materials and programs among diabetes-related groups, programs, etc.

- Promote improved standards of diabetes education and care through such vehicles as Professional Standards Review

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Organizations, Certification Boards, Continuing Medical Education, and third-party reimbursement guidelines.

- Evaluate the effectiveness of the Clearinghouse programs.

The Clearinghouse would work closely with the National Diabetes Advisory Board to promote the rapid flow of research data to the Clearinghouse from the Diabetes Research and Training Centers, NIH, and the Center for Disease Control, thereby accelerating the immediate translation of research data into education materials for health professionals. The Clearinghouse would also be in a position to respond immediately to the communication needs of the National Diabetes Advisory Board and the diabetes community.

Activities of the Clearinghouse Related to Professional Education

The Education Committee of the National Commission on Diabetes conducted an extensive review of currently available professional educational materials for health professionals interested in the care of diabetic patients and has found these to be inadequate to meet current needs; therefore, professional educational materials should be developed and tailored to fill these needs.

Aside from standard textbooks, there is a shortage of practical updated educational material (including books, pamphlets, audio and audio-visual materials, and slides) for health professionals interested in diabetes. The available materials tend to be aimed at a single level of professional competence and are unsuitable for family practitioners and internists, diabetes specialists, endocrinologists, nurses, nutritionists, social workers, and others. The same complaint pertains to specialty medical journals, whose manuscripts generally relate to research results with little practical clinical material for the physician or nurse.

While the importance of continuing education is being recognized increasingly by medical leaders and health program planners, primary and secondary practitioners and allied health professionals lag behind in their awareness of its importance and in their commitment to it as an integral part of comprehensive care. If skills are to be improved, professional education for health professionals in practice and training must be expanded considerably; however, such education should address identified needs and its impact must be assessable. The effectiveness of continuing education courses has been diminished by the fact that the development of these courses has not been based upon identified needs of the specific audiences to which they are addressed. A baseline survey of the knowledge, attitudes, and health care behavior of practitioners would serve the dual function of 1) providing education planners with information to guide their development of the needed education programs and materials, and 2) providing an initial standard or baseline for later comparison of progress.

The treatment of diabetes is particularly complicated by the fact that the health professional must know not only the medical aspects of the diseases, but also how to instruct the patient in self-therapy. Once these deficiencies in knowledge and skills and the inappropriate attitudes have been identified, materials and programs should be designed to overcome these gaps. The Diabetes Research and Training Centers could lead the implementation of these professional education programs, but again the Clearinghouse would function as a valuable backup resource.

The professional education service of the Clearinghouse should focus first on an assessment of the attitudes, knowledge, skills, and health care behavior regarding diabetes of health professionals including family practitioners, internists, pediatricians, physicians specializing in diabetes, physicians-in-training, medical students, practicing nurses, student

nurses, nurses' aides, physician assistants, nutritionists, dieticians, social workers, etc.

Such survey activities can best be performed through a contract with a firm experienced in conducting nationwide survey research in the health field.

The results of these assessments of needs will then be correlated with:

- Assessments of effectiveness of existing information and educational materials for health professionals.

- Assessments of effectiveness of diabetes education in various curricula models in health professional programs.

Ad hoc task forces of experts will be convened by the Clearinghouse, under the sponsorship of the National Diabetes Advisory Board, to perform the following functions:

- Assess the need for new materials for the education of the professional.

- Evaluate the general approach to preparation of new educational materials.

- Establish acceptable standards and guidelines for development and utilization of educational materials based on scientific principles.

- Identify new needed materials to be prepared according to scientific principles, i.e., aimed at specific audiences through techniques effective in enhancing the knowledge, skills, and behavior of those audiences.

- Recommend the design of continuing medical education programs in diabetes to increase the competence of health professionals treating diabetic patients.

- Develop built-in systems to evaluate the impact of the educational materials.

- Make recommendations about the preparation and evaluation of educational materials to interested government agencies, voluntary agencies, and industry.

The staff of the Clearinghouse can then:

- Provide meaningful feedback to cooperating professionals and organizations regarding user profiles and quality assessment.

- Publish and distribute an inventory of acceptable professional education materials, updated continuously.

Finally, since the Clearinghouse will have essentially assessed the overall degree of knowledge of physicians and allied health personnel about diabetes, it can summarize their education needs and make that summary available to the National Diabetes Advisory Board, to health professional schools and training programs, and to professional boards and associations responsible for licensing physicians and allied health personnel.

Such a procedure would increase awareness of diabetes; raise educational standards for diabetes in medical and other health professional training programs; and ultimately raise professional standards, competence, and health care delivery.

Activities of the Clearinghouse Related to Patient Education

The National Commission on Diabetes strongly endorses patient education as an integral and essential part of medical care, and recommends that health professionals in every patient care setting, including private office practice, use a planned approach to meet patients' education needs; i.e., the health care system and its health care providers should view patient education as treatment. This view places extraordinary importance on the availability of quality education materials.

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To provide those educational materials for the patient and health professionals, the Clearinghouse should systematically identify, collect, and assess diabetes patient education materials; disseminate information to practitioners regarding the availability of materials judged effective; and point out unmet needs to the producers or distributors of materials.

Before developing the educational materials, the Clearinghouse must survey people with diabetes and their families to assess attitudes, knowledge, skills, and self-therapy behavior regarding diabetes. The survey should:

- Evaluate basic knowledge about diabetes.
- Assess emotional attitudes about this disease.
- Assess self-image as a person with diabetes and as the family of a person with diabetes in relationship to health care professionals and the public.
- Assess accessibility to educational materials (clinics, organizations, libraries).
- Assess educational needs in terms of literacy level, language spoken, age, and type of diabetes.
- Assess knowledge about self-therapy (diet, exercise, insulin, etc.)

A second assessment program of patient education materials conducted by the Clearinghouse should identify, collect, and evaluate information and educational materials already available. It should:

- Identify and collect diabetes information and education materials designed for the patient and his family.
- Evaluate the effectiveness of existing materials, using the ad hoc task force approach described above in the section on professional education.

Having done so, the Clearinghouse should:

- Publish and distribute an inventory of effective materials.
- Assess the need for new materials.
- Evaluate the general approach to preparation of new materials for people with diabetes and their families.
- Make recommendations about the evaluation and preparation of materials to interested government agencies, voluntary organizations, and industry.
- Prepare needed materials, if required.

Other agencies described in the Plan can utilize the results of the surveys and the materials to implement patient education programs of instruction.

Activities of the Clearinghouse Related to Public Education

Public education is an integral and essential part of diabetes management. Yet the general public, on the whole, has inadequate and erroneous information about diabetes mellitus. This knowledge deficiency has led to a lack of support from government, voluntary health agencies, and the general public for research programs in diabetes, and has produced discriminatory attitudes toward the diabetic patient. To increase public awareness of the nature and scope of diabetes mellitus, a public education effort is necessary.

The public must be made aware of factors affecting the incidence of diabetes in high risk groups, and of the importance of treatment in preventing acute complications, in promoting normal childhood growth, and in improving the health status of pregnant diabetic women and their offspring. Family members and service segments of the population potentially involved with people with diabetes should be

trained in crises intervention skills. In addition, an effort must be made to improve attitudes of the general public toward the diabetic so that present social and employment-related discrimination pressures can be reduced.

For effective communication of the facts about diabetes mellitus to the general public, the Commission recommends that a diabetes public education program be established within the Clearinghouse to:

- Survey national and regional segments of the population in order to identify present knowledge, attitudes, and behaviors of the general public regarding diabetes mellitus and diabetics.
- Collect diabetes information materials for the general public.
- Evaluate existing materials for effectiveness.
- Compile and distribute an inventory of effective materials and their sources.
- Identify the education needs of the public and needed materials.
- Develop standards for educational materials.
- Promote coordination of efforts of all groups presently involved in diabetes (American Diabetes Association, the Juvenile Diabetes Foundation, other voluntary health organizations, and other relevant public and private sector groups) and to recommend standards for materials and programs in diabetes education for the public.
- Develop education materials and programs as needed.
- Evaluate the effectiveness of the public information program.

Implementation of the Clearinghouse

While the need for the Clearinghouse is apparent, its organizational placement is difficult to ascertain. The Commission did consider the separation of the Clearinghouse into three separate structures -- professional, patient, and public -- as a means of more easily placing the functions within the agencies of the Federal Government; but this separation would be arbitrary, illogical in many respects, most certainly inefficient and duplicative in the implementation of many similar functions, and ultimately would not substantially answer the problem of organizational placement. It seemed inappropriate to place the Clearinghouse in the National Institutes of Health (NIAMDD) because many of the Clearinghouse's principal activities are not research-oriented and because the same questions exist as to whether the legislative authority of NIAMDD permits (or should permit) such activities. The Center for Disease Control was also considered; however, the CDC is not currently equipped to house and staff a Clearinghouse for diabetes and is already assigned the large role of establishing diabetes control programs. The Diabetes Control Program is such an important task that the Commission felt that it was inappropriate to dilute the energy and interest of this agency by asking it to accept the National Clearinghouse function in addition to its other responsibilities. For this reason,

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT FOR THE INITIAL PHASE OF PLANNING AND DEVELOPMENT, THE NATIONAL DIABETES INFORMATION AND EDUCATION CLEARINGHOUSE BE UNDER THE AUSPICES OF THE NATIONAL DIABETES ADVISORY BOARD.

The Board, through its Committee on Education and contract staff support, will

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oversee the development of a comprehensive clearinghouse plan, the initiation of basic functions such as the baseline surveys; and the ultimate placement of the Clearinghouse in an appropriate Federal agency based on a thorough review of all alternatives and the acceptance of the functions by the agency selected. Such a placement decision should be made within six months of the establishment of the National Diabetes Advisory Board.

The ultimate success of the Diabetes Clearinghouse will depend upon its mode of operation and a knowledgeable staff. For this reason, the Commission believes the Clearinghouse should operate with a small permanent staff (government or contract) and rely heavily on the expert task force approach to perform the review, assessment, and directive functions related to materials evaluation, program development, and resource coordination.

This approach has proven very effective in the past because it draws upon the acknowledged experts in various fields, all of whom could ordinarily not be represented in a clearinghouse of any size, and it involves many of the people who ultimately may be responsible for certain implementation aspects of the education/treatment program. This approach also minimizes the staff and facility costs of operating a clearinghouse by focusing on coordination and continuity, resource utilization by other organizations, information dissemination, evaluation, and reporting; and it permits the functions of the Clearinghouse to be flexible and expand or diminish over time, rather than become institutionalized.

The Commission also considered the funding implications of the Clearinghouse in light of its functions and the educational materials development efforts by other Federal and non-Federal agencies. The Commission does not want the Clearinghouse to become a massive organization which requires a large budget to maintain itself, but rather a resource developer and stimulator. For these reasons,

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT INITIALLY THE CLEARINGHOUSE BE FUNDED AT A MODEST LEVEL FOR PLANNING ($90,000), AND FOR INITIAL BASELINE SURVEYS ($250,000), AND IN SUBSEQUENT YEARS AT A LEVEL OF APPROXIMATELY $465,000.

The acceptance of the Clearinghouse function by a Federal agency would necessitate transferring the budget for the Clearinghouse to the organization in which it is placed; but, initially, the funds will be managed through the National Diabetes Council. Budget details are on next page.

PARTICIPATION OF NON-FEDERAL ORGANIZATIONS IN PROFESSIONAL EDUCATION PROGRAMS

The Commission recognizes that an agency of the Federal Government is not, and should not be, the deliverer of educational programs. Whereas the Clearinghouse can suggest areas of activities, the diabetes control program of the Center for Disease Control can identify successful programs, and the Diabetes Research and Training Centers can demonstrate good educational models. The most essential components of an education program are the existing non-Federal organizations which daily provide the basic continuing education for health professionals. The Commission also recognizes that continuous education programs must play a key role in translating research findings into health care practice. Therefore,

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THOSE ORGANIZATIONS RESPONSIBLE FOR THE DEVELOPMENT AND CONDUCT OF CONTINUING MEDICAL EDUCATION PROGRAMS INCREASE THE QUALITY AND NUMBER OF SUCH PROGRAMS RELATED TO THE TREATMENT OF DIABETES.

Clearinghouse Budget

Fiscal Year 1976	Staff	Task Force Support*	Surveys	Materials Development	Materials Purchase & Reproduction
Professional	$80,000	$10,000	$150,000	---	---
Patient					
Public			100,000		
	$80,000	$10,000	$250,000		
Fiscal Year 1977-1980					
Professional	$200,000	$60,000	$40,000	$10,000	$ 6,000
Patient				40,000	24,000
Public			25,000	30,000	30,000
	$200,000	$60,000	$65,000	$80,000	$60,000

* Consultant fees, travel, per diem, etc.

The Commission suggests that the development and presentation of continuing medical education programs be based on a sound assessment of needs and on evaluation of program effectiveness emphasizing measurement of the behavior changes on the part of the professional. The Commission believes that the resources of every medical school, the voluntary health agencies, and the appropriate professional societies should be utilized in the implementation of this recommendation. Since progress in this area depends on the voluntary cooperation of non-Federal organizations, the National Diabetes Advisory Board will promote and monitor this aspect of the Commission's recommendation, and will cooperate as a resource to all interested organizations.

EVALUATION OF DIABETES HEALTH CARE AND EDUCATION PROGRAMS

Many of the Committee and Workgroup reports to the Commission emphasized the need for evaluative studies. The Education and Treatment Committees, in particular, argued effectively for conducting evaluative studies and creating new evaluation designs as the means of identifying effective treatment protocols and education techniques. Since education and alternative treatments are essential in minimizing the complications of diabetes, the Commission wishes to emphasize the need for evaluative studies as a part of the Long-Range Plan to Combat Diabetes. Therefore,

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT RESEARCH FUNDING AGENCIES, PARTICULARLY THE NATIONAL INSTITUTES OF HEALTH, DIABETES RESEARCH AND TRAINING CENTERS, AND THE VETERANS ADMINISTRATION, HEALTH RESOURCES ADMINISTRATION, AND HEALTH SERVICES ADMINISTRATION BE ALERT AND RECEPTIVE TO THE SPONSORSHIP OF WELL-DESIGNED EVALUATION STUDIES AS A PART OF THEIR COMPETITIVELY AWARDED RESEARCH PROGRAMS.

The Commission believes that evaluative studies may include research into the basic design of evaluation methods themselves as well as the effective application of those designs to assess treatment and education. Both of these approaches are

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considered valid research by the Commission and deserving of support. Since evaluative studies in treatment and education are some of the most difficult and expensive research projects to design and do, the research community should submit extremely well-designed proposals which address outcome and process.

To promote evaluative studies, to create interest on the part of funding agencies in sponsoring such research and on the part of the individual researcher in turning his creative talents to this important area, the Commission intends to sponsor a workshop on evaluative studies in diabetes treatment. This workshop will be held under the auspices of the National Diabetes Advisory Board (or the Commission, if the Board has not yet been established) within the next several months, and will be conducted in a fashion similar to those held by the Etiology and Pathology Committee of the Commission. The workshop will bring together individuals skilled in evaluative design, experts in diabetes treatment, and the appropriate Federal agencies to identify the needs in this area, to assess the feasibility of sponsored research topics, and, based on that assessment, to develop a plan with a budget for subsequent endorsement by the National Diabetes Advisory Board.

NATIONAL DIABETES DATA GROUP

A special workgroup of the Commission investigating a National System for Diabetes Data Resources identified the need for a systematic approach to the design, collection, analysis, and documentation of data of the Plan's programs and for a data base to support a public health policy for diabetes. Also, an evaluation mechanism for tracking the progress of the Long-Range Plan itself was thought essential.

Where appropriate, the collection, analysis, and dissemination of data have been integrated into the design of specific components of the Plan. However, a major portion of the data collection effort--public health epidemiologic data, improvement in data collection procedures, timely availability of these data, and cost-benefit analyses using these data--is not logically associated with any one component of the plan. The Commission concluded that these data functions could best be coordinated through the National Diabetes Advisory Board by a subcommittee called the National Diabetes Data Group.

The Group would be composed of representatives of interested Federal agencies (the National Center for Health Statistics, the National Institute of Arthritis, Metabolism, and Digestive Diseases, the Center for Disease Control, the Social and Rehabilitation Service, and the Social Security Administration, etc.) and from non-Federal organizations (voluntary health agencies, diabetes service agencies, private data collectors). The Group should be chaired by an individual selected on merit (preferably an epidemiologist experienced in diabetes) and supported with Federal funds for 15-20% of his time for this assignment. Issues regarding the organizational placement of this group and its chairman have not been satisfactorily resolved; however, the Commission believes strongly in the need for the functions to be performed. Therefore,

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THE ESTABLISHMENT OF A NATIONAL DIABETES DATA GROUP, SUPPORTED BY FEDERAL FUNDS, TO FOSTER THE COLLECTION FROM MULTIPLE SOURCES, THE ANALYSES, AND THE DISSEMINATION OF DIABETES DATA RELATED TO PUBLIC HEALTH POLICY.

The primary functions of the Data Group would be to:

- Define and coordinate the public health (primarily epidemiologic) data to be collected and analyzed.

- Promote the timely availability of source data to interested investigators.

- Seek changes in reporting systems (such as for mortality) to more accurately identify and categorize the impact of diabetes upon morbidity and mortality.

- Sponsor cost-benefit studies of program alternatives which would then be possible using the results of improved data collection and analyses and timely reporting.

The public health impact of diabetes mellitus has not been generally known because of the inadequate definition of the disease and its measurement, the resultant underreporting of its incidence and prevalence, and the failure of mortality statistics to recognize diabetes as a cause of death due to complications in mortality statistics. This situation can be quickly and inexpensively remedied with the establishment of National Diabetes Data Group to assist in the design of future data collection efforts by the National Center for Health Statistics and others, to influence modifications in mortality reporting methods, to oversee the data collection and to coordinate the publication of accurate epidemiologic data, and to ensure its availability to all interested groups.

Despite the large numbers of data-gathering activities within DHEW, critical gaps in usable information still exist in the accuracy and timeliness of those data collected and reported for diabetes (see Scope Committee Report, Vol III, Part 1). The Assistant Secretary for Health has recognized this problem in its broadest context and as a result has established a Health Data Policy Committee (HDPC) as the locus for a coordinated approach to data-oriented health policy issues, and to review and interpret the advice of the U. S. National Committee on Vital and Health Statistics (NCVHS) established under Public Law 93-353. These related agencies should be involved in the establishment of this Group and in the ultimate resolution of its organizational placement. In the interim,

- THE NATIONAL COMMISSION ON DIABETES RECOMMENDS THAT THE NATIONAL DIABETES DATA GROUP BE ADMINISTRATIVELY ATTACHED TO THE NATIONAL DIABETES ADVISORY BOARD WITH FUNDING SUFFICIENT TO SUPPORT ITS FUNCTIONS AS DESCRIBED HEREIN.

The National Diabetes Advisory Board will appoint the first Chairman of the National Diabetes Data Group with the concurrence of the HDPC, NCVHS, NCHS, and NIAMDD. Activities of the Data Group, with appropriate budget requests are as follows:

National Diabetes Data Group Budget
($ in thousands)

	FY 1976	FY 1977	FY 1978	FY 1979	FY 1980
Chairman	$ 10	$ 10	$ 10	$ 10	$ 10
Support Staff	25	25	25	25	25
Meeting Support	12	12	12	12	12
Health Statistics Data Library	50	50	50	50	50
Diabetes Publication	-	-	-	-	200
Special Studies	100	100	100	100	
Total	$ 197	$ 197	$ 197	$ 197	$ 297

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It is the intent of the Commission that this Group utilize existing Federal resources, particularly the NCHS, whenever possible, in conducting its responsibilities. In this light, the Commission suggests that the NCHS be provided additional staff or contract resources to support the ready availability of data (Health Statistics Data Library) and the assembly and publication of a document (Source Book) every five years containing current public health data on the disease drawn from not only NCHS sources, but also all other appropriate Federal and non-Federal sources.

The Commission suggests that the Data Group or appropriate agencies of the Public Health Service sponsor a further study of the methodology of estimating the economic impact of diseases. The Data Group would use the results of such a study to refine the estimates of the economic impact of diabetes. It is particularly important that the role of complications from diseases like diabetes be better understood if estimates of economic impact are to give a complete picture and be useful in establishing public health policy.

PROGRAM FUNDING SUMMARY

Introduction

This Program Funding Summary of the National Commission on Diabetes has four sections: (1) a description of the level of effort as of FY 1975 on diabetes, (2) a recent funding history for diabetes programs as the base upon which the Commission's recommendations build, (3) the methods and procedures used to produce the funding history, and (4) the budget summary of all the Commission's recommendations.

Diabetes Research in FY 1975

The economic impact of diabetes in the United States is estimated to be over $5.3 billion every year, of which $2.5 billion is for direct health care costs.[1] However, to combat this disease, only $46 million was spent on diabetes research in the United States in FY 1975 (Table I).

The Federal Government supports the largest part of diabetes research, amounting to $43 million in FY 1975 (Table I), most of which was funded through the National Institutes of Health (NIH). Most of the NIH research specifically directed to diabetes is in one Institute -- the National Institute of Arthritis, Metabolism, and Digestive Diseases (NIAMDD). However, because of complications that result from diabetes, much of the research done by other Institutes, particularly the National Eye Institute (NEI) and National Heart and Lung Institute (NHLI), is also relevant to diabetes. Of the direct extramural diabetes-related research supported by NIH in FY 1975, 42% was by NIAMDD, 13% by NEI, 16% by NHLI, and 29% by eight other Institutes (Table II).

Diabetes research has a larger share of the NIAMDD budget (11.4%) than it has of the total NIH budget (2.4%), as would be expected. However, the National Eye Institute, with the work it supports in retinopathy, glaucoma, and cataracts, actually gives a larger share of its extramural research budget (14%) to diabetes than does NIAMDD. Also, diabetes-related projects make considerable use of the facilities of the General Clinical Research Centers, where nearly 14% of the projects were diabetes related in 1975 when only 2.4% of NIH extramural research funds were being spent on diabetes.

Extramural research constituted over 70% of the total NIH obligations in FY 1975. Furthermore, NIH spends about 90% of its obligations on research and training activities (Table III).

Recent History of NIH Diabetes Research Funding (1972-1975)

The funding pattern for diabetes research was examined for FY 1972 to 1975. This time frame was necessitated by the unavailability of detailed data for prior years.

The obligations for diabetes extramural research of the National Institutes of Health remained relatively constant at the $25 million level for FY 1972-1974, but increased by about 40% to $35 million in FY 1975 (Table V). (Notice: FY 1973 was slightly below, and FY 1974 was slightly above the $25 million level because of the impoundment and subsequent release of funds in those years.) In FY 1975, however, there was a 40% increase, to a level of $35 million. Despite the relatively large increase in FY 1975, the annual real growth rate in NIH diabetes extramural research has been only about 9%. If the effects of inflation are considered, the deflated growth rate is around 5% for the period.

[1] Report of the Workgroup on Economic Impact, National Commission on Diabetes, September 27, 1975.

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The 1973 impoundment had a more dramatic effect on the National Institute of Arthritis, Metabolism, and Digestive Diseases than on NIH as a whole, and because this Institute is a major factor in diabetes research, an examination of the effects on it can provide useful insights. The impoundment actually decreased NIAMDD's funding from FY 1972 to FY 1973; and when the funds were released, NIAMDD did not share proportionately in the increase. Finally, in 1975, NIAMDD funding decreased once again despite a slight increase for the National Institutes of Health as a whole (Table VI).

However, a different set of conclusions can be drawn about diabetes research within the National Institute of Arthritis, Metabolism, and Digestive Diseases; its pattern of funding has been almost identical to that of NIH overall. Diabetes research had the same relative increase (33%) from FY 1973 to FY 1974 when the impounded funds were released, and it shared in the overall NIH increase in FY 1975. This means that diabetes research now claims a larger portion of the total NIAMDD budget, having grown from 6.2% to 8.5% over the four-year period (Table VI).

The National Institute of Arthritis, Metabolism, and Digestive Diseases is the Institute most involved in the training of diabetes researchers, with 53 out of the 55 diabetes training awards in FY 1975. The funding history for training reveals that, with the exception of FY 1973's impoundment, the monies obligated have remained relatively constant from year to year (Table VII). The combined effects of inflation and increases in the stipend levels for training positions have resulted in a decline in the number of positions which NIAMDD is able to offer. In particular, postdoctoral positions declined from 344 in FY 1970 to 246 in FY 1975 (Table VII).

It should be noted that annual funding patterns, even when they show steady growth, can obscure the unevenness of quarterly obligations patterns within a year. In the five years from FY 1971 to FY 1975, only an average of 11% of the funds were obligated in the first quarter, with the bulk (40+%) occurring in the last quarter (Table VII). This uneven funding pattern often produces discontinuities in long-term research programs, and creates uncertainty in research planning at the level of the individual investigators.

Method for Estimating NIH Diabetes Research Funding

The Commission required as full and accurate a picture of recent NIH diabetes research support as it was possible to obtain. Moreover, the Commission wished to establish definitions and procedures so that it will be possible to compare future estimates of diabetes research support with the current effort (FY 1975) and with the recommendations made in the Long-Range Plan. Without a well-specified method for estimating diabetes research support, it will not be possible to know if the recommendations of the plan or the intentions of the Congress, with respect to diabetes research, are being carried out.

Three steps were followed in estimating recent extramural diabetes research funding:

1) Identification of research projects that were likely to be directly related to diabetes by using the Computer Retrieval of Information on Scientific Projects (CRISP) system.

2) A review by NIAMDD's Diabetes Program staff of the projects identified by CRISP in order to group the projects into research categories and to eliminate any projects which had been incorrectly identified as directly related to diabetes.

3) A review, by the staff of each Institute, of the list of projects identified by CRISP and reviewed by the Diabetes Program staff.

The CRISP system is a computer data-base system maintained by the Division of Research Grants of NIH. The system contains scientific and fiscal data on research grants and contracts of the Public Health Service. In addition to such information as grant number, fiscal year of award, amount of award, and name of principal investigator, an abstract submitted by the principal investigator with his application is included. These applications are indexed, using not only index terms designated by the principal investigator, but also further indepth indexing of the application itself.

The searches for diabetes research projects made use of key words or key word combinations. During the reviews by the Diabetes Program staff, approximately one-third of the projects identified through the key word search were found not to be directly related to diabetes.

The key word list defines a broad search, and the project list requires knowledgeable professional review to avoid errors in identifying diabetes research projects. Even though the key word list is broadly defined, it is nevertheless this list that will provide a consistent basis for estimating the funding of diabetes research in future years and allow one to judge the extent to which the recommendations have been carried out.

It is, of course, difficult to draw a sharp boundary between research "directly" related to diabetes and that which is not so direct, particularly with general research relating to diseases that often occur as complications of diabetes. Thus, it would be possible to identify much of the research done in the National Heart and Lung Institute, the National Eye Institute, and the National Institute of Neurological and Communicative Disorders and Stroke as relevant to diabetes. However, the Commission focused its recommendations on those research opportunities directed specifically towards diabetes, and therefore only that portion of the work in those Institutes was included when identifying diabetes research.

The CRISP system does not contain data on intramural research or training programs. That information was provided to the Commission by each Institute Director.

Budget Summary for the Long-Range Plan to Combat Diabetes (Tables IX - XII)

As described above, the methodology for formulating he budgets recommended by the National Commission on Diabetes relied on establishing FY 1975 as the base upon which to build up the budget projections.

The National Commission is, however, submitting its recommended budget in the middle of a fiscal year and at a point when no new appropriations have been made for the National Institutes of Health for that year. For this reason the diabetes research effort for 1976 as a whole is unlikely to be significantly different from that for 1975 either in amount or composition. For these reasons, the three-year plan to combat diabetes requested by Congress begins in FY 1977 and runs through FY 1979. In Tables IX through XII, FY 1977 is further identified as "Plan Year 1."

This is not to say that the Commission expects, or believes, that significant steps toward meeting the goals of the Commission's recommendations cannot be made in what remains of FY 1976. It is hoped that the various Institutes and other agencies will begin to set the Long-Range Plan in motion within the resources available to them in FY 1976. Further, to the extent possible at this point in the appropriations cycle, it is recommended that Congress provide the necessary funds. The suggestions of the Commission for FY 1976 are

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shown in the budget tables. In addition, suggestions are made for FY 1980 to indicate the continuing increases in effort which the Commission believes are necessary beyond the period of the formal plan. The tables do not show recommendations broken out for the transition quarter at the end of FY 1976. It is recommended that budget authority for that quarter be at the level of the FY 1976 recommendations.

IT SHOULD BE NOTED THAT NO ALLOWANCES FOR INFLATION ARE MADE IN ANY OF THE BUDGETARY PROJECTIONS. ALL DOLLAR AMOUNTS ARE STATED IN TERMS OF 1975 DOLLARS.

A few major observations regarding the Commission's recommendations can be made by examining the budgetary data. For instance, the sum total of all the Commission's recommendations, if adopted, would increase the Federal effort to combat diabetes from a level of $43 million in FY 1975 to $126 million in FY 1979; thus, by the third year of the Plan, the Federal diabetes effort would have increased three-fold. The largest increase comes in the first year of the Plan, FY 1977, when the diabetes program effort would be nearly double that of current levels.

The largest single increases are for research and manpower training, sponsored by the National Institutes of Health. NIH diabetes funding would go from the current level of approximately $40 million to $109 million in FY 1979, an increase of 179% (including the new Diabetes Research and Training Centers). The expenditure of such sums would allow training of diabetes researchers to expand five-fold by 1980.

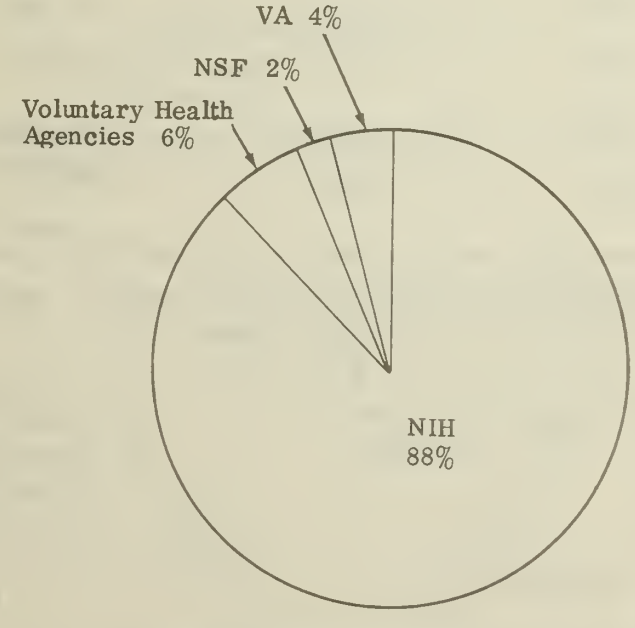
The National Institute for Arthritis, Metabolism, and Digestive Diseases, the Institute with the primary mission to combat diabetes, would receive the largest portion of the increased funding for research, nearly tripling its diabetes research funding by the third year of the plan. Other substantial increases would go to the National Eye Institute and the National Heart and Lung Institute, where research is directed at the two major categories of diabetes complications. The Commission's recommendations would double the funding for diabetes research in these two Institutes by FY 1979.

Further, the Commission recommends a program to control diabetes -- The Diabetes Control Program. This program would begin with ten community programs in the first year of the Plan, expanding to 60 programs by FY 1979.

Finally, the Commission is recommending new structures and a mechanism for the collection and exchange of information and for the coordination of research. To this end, funds are recommended in the annual amount of $1.4 million to establish a National Diabetes Advisory Board, a National Diabetes Education and Information Clearinghouse, and a National Diabetes Data Group.

TABLE I. Diabetes Research, FY 1975
($ in thousands)

Federal	
National Institutes of Health	$39,778
Veterans Administration	2,139
National Science Foundation	1,122
Subtotal	$43,039
Voluntary Health Agencies	2,664
Private Industry	Unknown
Total	$45,703+



Federal & Private Health Agencies Research Effort

Note: Private Industry Contribution Unknown

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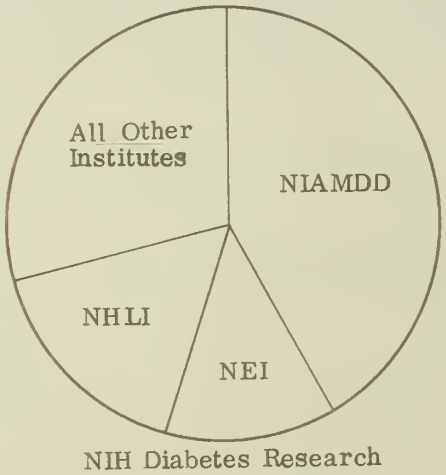
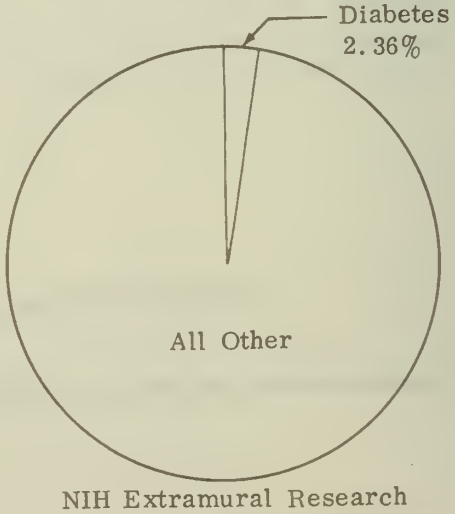
TABLE II. NIH Extramural Research, FY 1975

Institute	Diabetes Research ($ in thousands)	Institute Share of Total Extramural Diabetes Research (%)	Total Research ($ in thousands)	Diabetes Portion of Total Extramural Research
NIAMDD	$14,777	41.9%	$129,259	11.4%
NCI	822	2.3	469,835	.2
NHLI	5,588	15.8	263,123	2.1
NIDR	117	.3	30,947	.4
NINCDS	1,365	3.8	100,780	1.4
NIAID	289	.8	82,021	.4
NIGMS	730	2.1	129,308	.6
NICHD	1,073	3.0	97,023	1.1
NEI	4,491	12.7	32,042	14.0
DRR	5,733	16.3	42,326	13.5
Other	212	.6	112,479	.2
Total	$35,197	100.0%	$1,489,137 [1]	2.36%

[1]Total NIH Extramural Research, including research funded by Institutes not involved directly in diabetes related research.



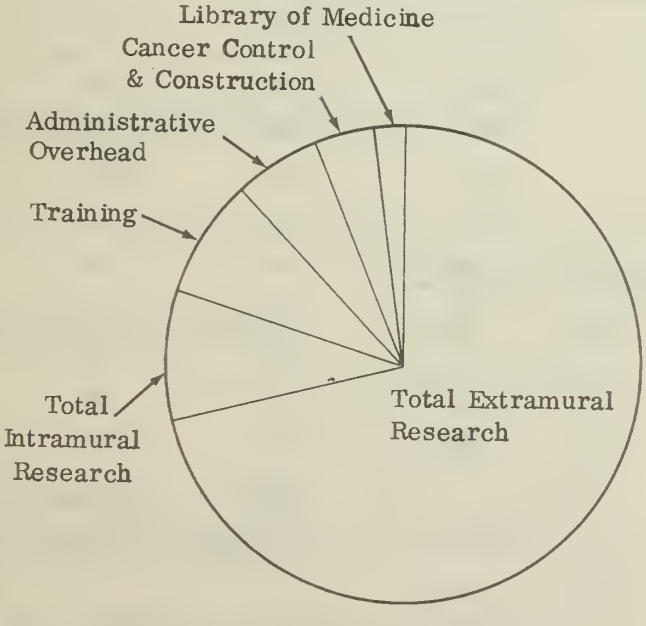
NIH Diabetes Research



NIH Extramural Research

TABLE III. Composition of FY 1975 NIH Obligations
($ in thousands)

	Amount	Percent
Total Extramural Research	$1,489,137	71.2%
Total Intramural Research	193,356	9.2
Training	154,432	7.4
Administrative Overhead	139,025	6.6
Cancer Control and Construction	87,962	4.2
Library of Medicine	28,848	1.4
Total	$2,092,760	100.0%



Composition of NIH Obligations

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TABLE IV. Diabetes Share of NIH Extramural Research
($ in millions)

Year	Diabetes Extramural Research	Total Extramural Research	Diabetes Share (%)
FY 1972	$25.0	$1,065.3	2.3 %
FY 1973	23.5	1,122.0	2.09
FY 1974	25.7	1,456.8	1.76
FY 1975	35.2	1,489.1	2.36

Annual Growth Rate of Diabetes Research = 9%

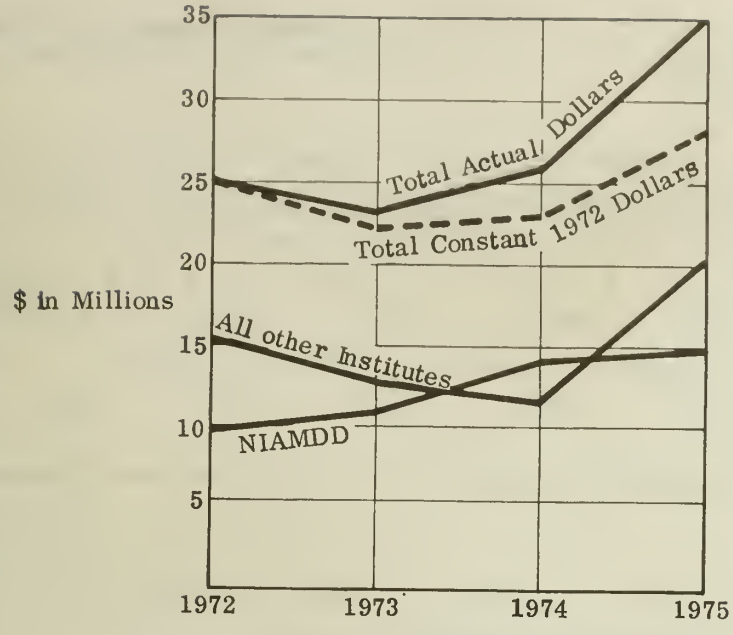
Annual Growth Rate in Constant Dollars = 5%

TABLE V. NIH Diabetes Related Extramural Research, FY 1972-1975
($ in thousands)

Institute	FY 1972	FY 1973	FY 1974	FY 1975
NIAMDD	$ 9,648	$10,734	$14,154	$14,777
NCI	1,184	815	965	822
NHLI	3,150	3,040	2,323	5,588
NIDR	165	69	68	117
NINCDS	826	688	679	1,365
NIAID	258	112	106	289
NIGMS	1,944	1,465	530	730
NICHD	1,530	1,141	925	1,073
NEI	2,124	2,562	3,376	4,491
Other	--	37	--	212
DRR[1]	4,216	2,802	2,619	5,733
Total	$25,045	$23,465	$25,745	$35,197
Constant 1972 Dollars[2]	$25,045	$22,470	$23,076	$28,502

[1]Portion of the DRR (GCRC) budget which is for diabetes. Obtained by pro-rating total GCRC budget by the number of diabetes projects performed in GCRC's in that year.

[2]The biomedical deflators used to convert to constant dollars (on a 1970 base): FY 1972 110.7, FY 1973 115.6, FY 1974 123.5, FY 1975 136.7 (est.)



NIH Diabetes Funding FY 1972-75
(From Table V Preceding)

TABLE VI. NIAMDD Share of Obligated Research Funds
($ in millions)

	FY 1972	FY 1973	FY 1974	FY 1975
Total NIH Institute Research Program[1]	$1,465	$1,484	$1,945	$2,064
NIAMDD	$155.3	$142.8	$177.4	$173.4
NIAMDD Share (%)	10.6%	9.6%	9.1%	8.4%
Extramural Diabetes Research in NIAMDD	$9.6	$10.7	$14.2	$14.8
Extramural Diabetes Share of NIAMDD Obligations (%)	6.2%	7.5%	9.9%	8.5%

[1]Source: Basic Data Relating to NIH, Office of Program Planning and Evaluation, February 1975. (Excludes the National Library of Medicine.)

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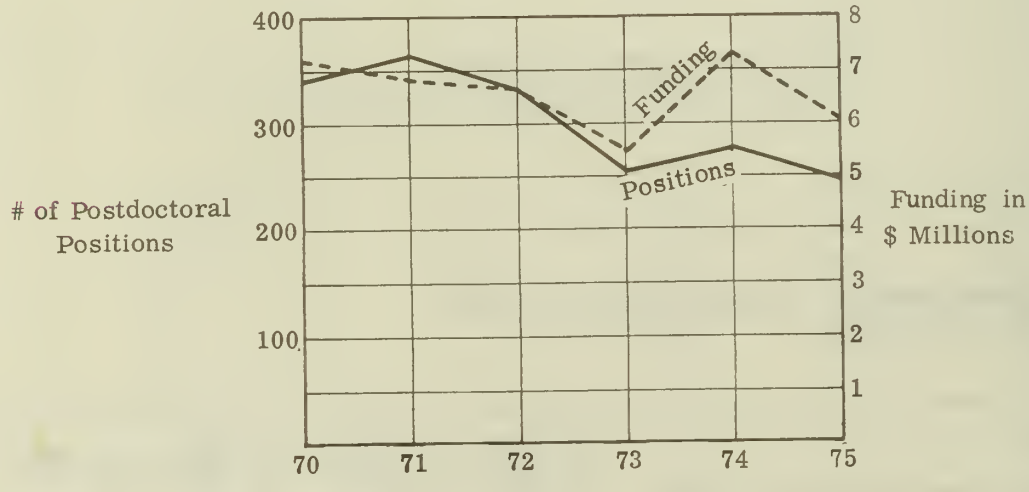
TABLE VII. NIH/NIAMDD Training, FY 1970-1975 (Training, Fellowships, Research Career Programs)
($ in millions)

	FY 1970	FY 1971	FY 1972	FY 1973	FY 1974	FY 1975
Diabetes, Endocrinology, Metabolism	$7.2	$6.9	$6.6	$5.5	$7.3	$6.0
No. of Postdoctoral Positions	344	365	332	254	266	246



Postdoctoral Training (Table VII)
FY 1970-1975

TABLE VIII. NIH Quarterly Research Obligations Pattern, FY 1971-1975

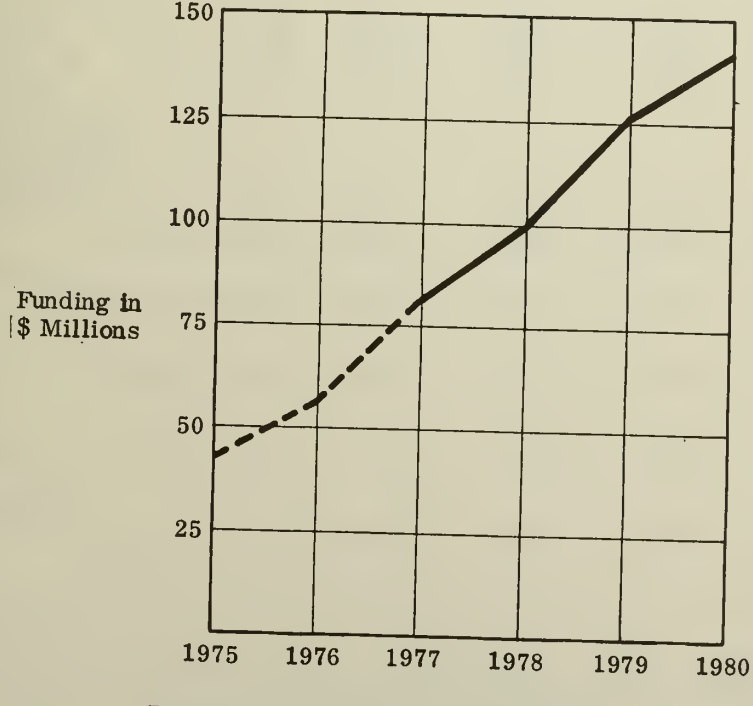
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
Average Quarterly Percentage of Annual Obligation	10.9%	19.3%	28.7%	41.1%	100.0%

TABLE IX. Budget Summary Recommendations
(constant FY 1975 $ in thousands)

	FY 1975	FY 1976	FY 1977 (Plan Yr.1)	FY 1978 (Plan Yr.2)	FY 1979 (Plan Yr.3)	FY 1980 (Plan Yr.4)
1. National Diabetes Advisory Board	$ 0	$ 500	$ 500	$ 500	$ 500	$ 500
2. NIH Programs	39,778	51,791	64,094	76,391	89,869	103,155
3. Research and Training Centers	0	0	8,000	12,000	20,000	20,000
4. Health Care and Control Programs	2,139	3,339	7,712	9,812	13,820	16,841
Subtotal [1]	$41,917	$55,630	$80,306	$98,703	$124,189	$140,496
5. NSF [2]	1,122	1,122	1,122	1,122	1,122	1,122
Total	$43,039	$56,752	$81,428	$99,825	$125,311	$141,618

[1] These amounts include only the diabetes share of the budget increases recommended for the General Clinical Research Centers (see Table Xg).

[2] No specific recommendations were directed towards the National Science Foundation (NSF).



Recommended Budget FY 1975-1980

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TABLE X. NIH Recommendations by Institute--Intramural and Extramural
(constant FY 1975 $ in thousands)

	FY 1975	FY 1976	FY 1977 (Plan Yr. 1)	FY 1978 (Plan Yr. 2)	FY 1979 (Plan Yr. 3)	FY 1980 (Plan Yr. 4)
NIAMDD	$18,373	$25,653	$32,909	$40,473	$49,009	$58,241
NEI	4,763	6,324	8,207	10,331	13,034	14,463
NINCDS	1,365	1,606	1,792	1,997	2,218	2,459
NIDR	427	702	917	1,132	1,347	1,562
NICHD	1,476	2,892	4,016	4,758	5,724	7,055
NHLI	5,588	6,486	7,450	8,559	9,059	9,559
DRR(GCRC)	5,733	6,075	6,750	7,088	7,425	7,763
Other [1]	2,053	2,053	2,053	2,053	2,053	2,053
TOTAL	$39,778 [2]	$51,791	$64,094	$76,391	$89,869	$103,155

[1] Diabetes research effort in Institutes not directly affected by Commission recommendations (NCI, NIGMS, NIAID, NIEHS).

[2] Total NIH dollars spent on intramural ($4,581) and extramural ($35,197, as shown in Table II) research.

TABLE Xa. National Institute of Arthritis, Metabolism and Digestive Diseases
(constant FY 1975 $ in thousands)

	Present	FY 1976	FY 1977 (Plan Yr.1)	FY 1978 (Plan Yr.2)	FY 1979 (Plan Yr.3)	FY 1980 (Plan Yr.4)
1. Manpower						
Training grants & fellowships	$ 1,074	$ 1,260	$ 1,460	$ 1,660	$ 1,860	$ 2,060
RCDA	420	500	750	1,000	1,250	1,250
Distinguished Scientists	--	240	280	420	560	700
Total Manpower	$ 1,494	$ 2,000	$ 2,490	$ 3,080	$ 3,670	$ 4,010
2. Extramural Research						
a. Basic Endocrinology & Metabolism	$ 7,996	$10,400	$13,520	$17,576	$22,850	$29,705
b. Etiology						
• Viruses	365	500	650	845	1,098	1,428
• Genetics	318	418	523	653	816	918
c. Angiopathy	389	750	1,000	1,250	1,500	1,500
d. Nutrition & Obesity						
• General Research & Obesity Centers	487	1,000	1,500	1,500	1,500	1,500
• Caloric Intake & Nutritional Patterns Studies	--	200	260	338	440	572
• Neurophysiology of Appetite - Control Studies	--	200	260	338	440	572
e. Transplantation & Devices						
• Transplantation	684	889	1,156	1,503	1,954	2,540
• Devices	--	500	1,500	3,000	3,000	3,000
f. Epidemiology	394	545	754	1,044	1,445	2,000
g. Resources Facilities	--	750	1,000	1,250	1,500	1,500
h. Clinical Study of Juvenile-Onset Diabetes (joint with NHLI)	--	500	1,000	1,000	1,000	1,000
i. Other[1]	4,144	4,144	4,144	4,144	4,144	4,144
Total Extramural Research	$14,777	$20,796	$27,267	$33,941	$41,687	$50,379
3. Intramural Research	2,000	2,200	2,400	2,600	2,800	3,000
4. Research Information	102	207	302	402	402	402
5. New Administrative Positions	--	450	450	450	450	450
Total	$18,373	$25,653	$32,909	$40,473	$49,009	$58,241

[1] This is the amount currently spent in areas of extramural diabetes research that are not directly addressed by Commission recommendations. These areas are (in thousands): University Group Diabetes Program ($863), Hypoglycemia ($78), Neuropathy ($80), Food Intake Functions ($77), Gastrointestinal Functions ($546), Neurology ($280), Pancreatic Functions ($333), Pharmacology ($213), Diabetes Centers ($1,652).

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TABLE Xb. National Eye Institute
(constant FY 1975 $ in thousands)

	Present	FY 1976	FY 1977 (Plan Yr.1)	FY 1978 (Plan Yr.2)	FY 1979 (Plan Yr.3)	FY 1980 (Plan Yr.4)
1. Manpower						
a. Training Grants & Fellowships	$ 73	$ 240	$ 400	$ 560	$ 800	$ 920
b. Res. Career Development	12	75	150	225	300	375
c. Distinguished Scientists	--	35	70	105	140	175
Total Manpower	$ 85	$ 350	$ 620	$ 890	$ 1,240	$ 1,470
2. Extramural Research	4,491	5,614	7,017	8,771	10,964	12,063
3. Intramural Research	187	300	450	550	650	750
4. New Administrative Positions	--	60	120	120	180	180
Total	$4,763	$6,324	$8,207	$10,331	$13,034	$14,463

TABLE Xc. National Institute of Neurological and Communicative Disorders and Stroke
(constant FY 1975 $ in thousands)

	Present	FY 1976	FY 1977 (Plan Yr.1)	FY 1978 (Plan Yr.2)	FY 1979 (Plan Yr.3)	FY 1980 (Plan Yr.4)
1. Manpower						
Fellows	$ --	$ 40	$ 80	$ 120	$ 160	$ 200
2. Extramural Research	1,365	1,506	1,652	1,817	1,998	2,199
3. Intramural Research						
4. New Administrative Positions	--	60	60	60	60	60
Total	$1,365	$1,606	$1,792	$1,997	$2,218	$2,459

TABLE Xd. National Institute of Dental Research
(constant FY 1975 $ in thousands)

	Present	FY 1976	FY 1977 (Plan Yr.1)	FY 1978 (Plan Yr.2)	FY 1979 (Plan Yr.3)	FY 1980 (Plan Yr.4)
1. Manpower						
a. Training Grants & Fellowships	$ --	$ 40	$ 80	$ 120	$ 160	$ 200
b. Res. Career Development	--	25	50	75	100	125
Total Manpower	$ --	$ 65	$ 130	$ 195	$ 260	$ 325
2. Extramural Research	$ 117	$ 217	$ 317	$ 417	$ 517	$ 617
3. Intramural Research	310	360	410	460	510	560
4. New Administrative Positions	--	60	60	60	60	60
Total	$ 427	$ 702	$ 917	$ 1,132	$ 1,347	$ 1,562

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TABLE Xe. National Institute of Child Health and Human Development
(constant FY 1975 $ in thousands)

	Present	FY 1976	FY 1977 (Plan Yr.1)	FY 1978 (Plan Yr.2)	FY 1979 (Plan Yr.3)	FY 1980 (Plan Yr.4)
1. Manpower						
a. Training Groups & Fellowships	$ --	$ 200	$ 240	$ 280	$ 320	$ 400
b. Res. Career Development Awards	41	125	150	175	200	250
Total Manpower	$ 41	$ 325	$ 390	$ 455	$ 520	$ 650
2. Extramural Research						
a. General Research	$ 889	$ 1,156	$ 1,502	$ 1,953	$ 2,539	$ 3,300
b. Infant Feeding	184	239	311	404	525	683
c. Infants of Diabetic Mothers Follow-up Study	--	100	200	200	200	200
d. Contraception Studies	--	450	900	900	900	900
e. Expanded Research on Pregnancy and Diabetes	--	200	291	424	618	900
Total Extramural Research	$ 1,073	$ 2,145	$ 3,204	$ 3,881	$ 4,782	$ 5,983
3. Intramural Research	$ 362	$ 362	$ 362	$ 362	$ 362	$ 362
4. New Administrative Positions	--	60	60	60	60	60
Total	$ 1,476	$ 2,892	$ 4,016	$ 4,758	$ 5,724	$ 7,055

TABLE Xf. National Heart and Lung Institute
(constant FY 1975 $ in thousands)

	Present	FY 1976	FY 1977 (Plan Yr. 1)	FY 1978 (Plan Yr.2)	FY 1979 (Plan Yr.3)	FY 1980 (Plan Yr. 4)
1. Extramural Research	$5,588	$6,426	$7,390	$8,499	$8,999	$9,499
2. New Administrative Positions	--	60	60	60	60	60
Total	$5,588	$6,486	$7,450	$8,559	$9,059	$9,559

TABLE Xg. General Clinical Research Centers
(constant FY 1975 $ in thousands)

	Present	FY 1976	FY 1977 (Plan Yr.1)	FY 1978 (Plan Yr.2)	FY 1979 (Plan Yr.3)	FY 1980 (Plan Yr.4)
Pro Rata Share Attributable to Diabetes Projects (13.5%)	$ 5,733	$ 6,075	$ 6,750	$ 7,088	$ 7,425	$ 7,763
Total GCRC Funds	$42,326	$45,000	$50,000	$52,500	$55,000	$57,500

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TABLE XI. Diabetes Research and Training Centers
(constant FY 1975 $ in thousands)

Present	FY 1976	FY 1977 (Plan Yr. 1)	FY 1978 (Plan Yr. 2)	FY 1979 (Plan Yr. 3)	FY 1980 (Plan Yr. 4)
0	0	$8,000	$12,000	$20,000	$20,000

TABLE XII. Health Care, Education, and Control Programs
(constant FY 1975 $ in thousands)

	Present	FY 1976	FY 1977 (Plan Yr.1)	FY 1978 (Plan Yr.2)	FY 1979 (Plan Yr.3)	FY 1980 (Plan Yr. 4)
Center for Disease Control	$ --	$ --	$3,600	$5,100	$ 8,400	$10,600
Veterans Admin.						
Manpower	--	79	157	229	314	400
Project Research	--	160	314	458	628	800
Cooperative Project	--	126	249	363	498	640
Special Units	--	298	591	861	1,179	1,500
Total Add-on	$ --	$ 663	$1,311	$1,911	$ 2,619	$ 3,340
Base	2,139	2,139	2,139	2,139	2,139	2,139
		2,802	3,450	4,050	4,758	5,479
Education Clearinghouse	--	340	465	465	465	465
National Diabetes Data Group	--	197	197	197	197	297
Total		$3,339	$7,712	$9,812	$13,820	$16,841

SUMMARY OF THE RECOMMENDATIONS

TO THE INSTITUTES OF THE NATIONAL INSTITUTES OF HEALTH:

- That the National Institute of Arthritis, Metabolism, and Digestive Diseases
  - Increase its support for research efforts in basic endocrinology, metabolism, and nutrition, and apply the results of such research to the study of diabetic defects and the causes, prevention, and cure for diabetes (p. 14).
  - Increase its support for research efforts in nutrition relating to diabetes and to obesity in persons with diabetes, and increase the number of its Obesity Centers to three to encourage such research and to train manpower in this area (p. 15).
  - Establish an ad hoc advisory panel on transplantation and artificial devices and, commensurate with the panel's recommendations, increase support of research efforts in transplantation of the pancreas or islet cells and development of artificial devices (p. 16).
  - Increase its support for research efforts in diabetic microangiopathy (p. 18).
  - Initiate and support (with the National Heart and Lung Institute) a five-year study to assess the effect of treatment for juvenile-onset diabetes on the development of micro- and macrovascular complications (p. 17).
  - Expand its ongoing intramural research program related to diabetes (p. 22).
  - Expand its training fellowships and special awards in the area of diabetes-related studies (p. 22).
  - Review all available research information resources in order to develop a system to provide a complete and up-to-date source of information on ongoing and proposed research relating to diabetes (p. 26).
- That the National Eye Institute
  - Increase its support for research efforts on the causes and treatment of diabetic retinopathy (p. 19).
  - Expand its ongoing intramural research program related to diabetes (p. 22).
  - Expand its training fellowships and special awards in the area of diabetes-related studies (p. 22).
- That the National Institute of Neurological and Communicative Disorders and Stroke
  - Increase its support for basic research relating to peripheral neuropathy, stroke, and other neural disorders prevalent in diabetes (p. 20).
  - Expand its training fellowships and special awards in the area of diabetes-related studies (p. 22).

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- That the National Institute of Dental Research
  - Increase its support for research efforts on the dental complications of diabetes (p. 20).
  - Expand its ongoing intramural research program related to diabetes (p. 22).
  - Expand its training fellowships and special awards in the area of diabetes-related studies (p. 22).
- That the National Institute for Child Health and Human Development
  - Sponsor a long-term clinical study on the effects of infant feeding on the development of obesity and diabetes (p. 15).
  - Increase its support for basic and clinical research efforts on pregnancy and diabetes, and sponsor a follow-up study of infants of mothers with diabetes (p.21).
  - Increase its support for research efforts on contraceptive agents and diabetes (p. 21).
  - Expand its training fellowships and special awards in the area of diabetes-related studies (p. 22).
- That the National Heart and Lung Institute
  - Increase its support for those research efforts in heart disease, peripheral vascular disease, atherosclerosis, hypertension, and blood coagulation that relate to diabetes morbidity and mortality, and increase its support for those research studies already under way which are unique to diabetic macroangiopathy (p. 18).
  - Initiate and support (with the NIAMDD) a five-year clinical study to assess the effect of treatment for juvenile-onset diabetes on the development of micro- and macrovascular complications (p. 17).
- That appropriate Institutes of the NIH
  - Establish research resource facilities to maintain research materials and animal models, and provide economical and efficient services necessary to meet the needs of diabetes research (p. 25).
  - Be alert and receptive to the sponsorship of evaluation studies pertaining to diabetes treatment and education as a part of the NIH's competitively awarded research programs (p. 55).
- That the National Institutes of Health sponsor annual interdisciplinary workshops, symposia, and conferences on diabetes and its complications to encourage cross-fertilization of ideas and cooperative research efforts (p. 26).

TO THE SECRETARY OF HEALTH, EDUCATION, AND WELFARE:

- That the program for Diabetes Research and Training Centers be implemented immediately, in accordance with the Long-Range Plan, and that the responsibility for its supervision be delegated to the Director of the National Institutes of Health (pp. 31, 34).

- That the Diabetes Control Program be implemented immediately in accordance with the Long-Range Plan, and that the responsibility for its supervision be delegated to the Center for Disease Control (pp. 38, 40).

- That he instruct the relevant agencies of his department, and request other identified Federal Departments: (1) to prepare a report with complete lists of services and resources within their organization to meet the needs of the patient with diabetes and with proposals on how these and additional resources may be used for diabetes research, treatment, and education in light of the Long-Range Plan, and (2) to present this report to the Secretary and the National Diabetes Advisory Board (p. 44).

TO THE ASSISTANT SECRETARY FOR HEALTH:

- That he advise the identified agencies of the Public Health Service to address the problem of diabetes according to the recommendations of the Long-Range Plan (p. 44 ff.).

- That a National Diabetes Information and Education Clearinghouse be established as a central resource for educational materials and information (p. 49).

- That a National Diabetes Data Group be established to coordinate the collection and publication of diabetes data related to public health policy (p. 56).

TO OTHER FEDERAL AGENCIES:

- That the Administrator of the Veterans Administration increase the VA programs in the areas of research, education, and treatment of diabetes and request additional funds for these programs (p. 42).

- That the Social and Rehabilitation Service ensure that appropriate services are available to the underserved population with diabetes for which the Agency provides support (p. 46).

- That the Social Security Administration modify its guidelines for reimbursement of patients with diabetes to ensure that patient education expenses are included as reimbursable elements of patient care (p. 46).

- That the Department of Defense review its programs in light of the recommendations for other Federal Agencies in the Long-Range Plan (p. 47).

- That the Department of Agriculture expand its intramural research programs on nutrition for the diabetic population, and orient its Extension Service to disseminate diabetes-related health information (p. 47).

- That the Commission on Human Resources of the National Research Council, National Academy of Sciences, recognize the critical needs of diabetes research when identifying those areas eligible for National Research Service Awards (p. 24).

- That research funding agencies of the Public Health Service not mentioned previously (particularly the Health Resources Administration and the Health Services Administration), the grantees of these agencies, and the Veterans Administration be receptive to the sponsorship of evaluation studies pertaining to diabetes education and treatment as a part of their competitively awarded research programs (p. 55).

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TO OTHERS IN THE DIABETES COMMUNITY:

- That patient education be considered an essential element of treatment, and that all related activities promote this key concept (p. 49).

- That those organizations responsible for the development and conduct of continuing medical education programs increase the quality and number of such programs related to diabetes (p. 54).

and, most important,

TO THE CONGRESS:

- That funds for increased diabetes research be appropriated to NIAMDD and other Institutes of the National Institutes of Health as detailed in the funding summary (pp. 28, 70).

- That the staff of the NIAMDD and other Institutes of the NIH be increased to meet the needs of the diabetes research program (pp. 27, 28).

- That increased funding support be provided to the General Clinical Research Centers Program of the Division of Research Resources of the NIH to ensure adequate resources for the clinical research needs of the Long-Range Plan (p. 25).

- That P.L. 93-354 be amended with respect to dates and duration of authorization for the Diabetes Research and Training Centers program and that funds for that program be appropriated (p. 35).

- That staff positions and funds be appropriated to the Center for Disease Control for the implementation and support of its Diabetes Control Program (p. 41).

- That appropriations be provided for (1) a National Diabetes Information and Education Clearinghouse, and (2) a National Diabetes Data Group (pp. 54, 57).

- That a National Diabetes Advisory Board be authorized and funded to review, evaluate, and advise with regard to the implementation of the Long-Range Plan, and that this Board be established in the Office of the Assistant Secretary for Health (p. 7).

SPECIFIC LEGISLATIVE PROPOSALS

AN ACT

To establish the National Diabetes Advisory Board and to take other actions to ensure the implementation of the Long-Range Plan to Combat Diabetes.

SHORT TITLE

SECTION 1. This Act may be cited as the "National Diabetes Advisory Board Act."

FINDINGS AND DECLARATION OF PURPOSE

SEC. 2. (a) The Congress makes the following findings:

(1) The National Commission on Diabetes has formulated a Long-Range Plan to Combat Diabetes.

(2) The ultimate goals of this Long-Range Plan are to discover means to prevent and to cure diabetes and its complications and to improve the care and quality of life of those individuals who now have or who will get diabetes before the discovery of preventive measures and a cure.

(3) In order to ensure the effective implementation of the Long-Range Plan it is necessary to have an organization with sufficient scope and authority to (A) review, evaluate, and advise with regard to the recommendations of the Long-Range Plan and (B) coordinate the utilization of national resources for diabetes research, education, and treatment.

(b) It is the purpose of this Act to

(1) establish a National Diabetes Advisory Board to ensure the implementation of the Long-Range Plan to Combat Diabetes, and

(2) take such other actions as are necessary to ensure the implementation of the Long-Range Plan to Combat Diabetes.

THE NATIONAL DIABETES ADVISORY BOARD

SEC. 3. (a) The Secretary of Health, Education, and Welfare shall, within 30 days of the date of enactment of this section, establish a National Diabetes Advisory Board (hereinafter referred to as the "Board").

(b) The Board shall be composed of twenty-three members as follows:

(1) The Assistant Secretary for Health.

(2) The Director of the National Institutes of Health.

(3) The Director of the National Institute of Arthritis, Metabolism, and Digestive Diseases.

(4) The Director of the Center for Disease Control.

(5) The Administrator of the Health Services Administration.

(6) The Administrator of the Health Resources Administration.

(7) The Chairperson of the Diabetes Mellitus Coordinating Committee.

(8) Two members of the Senate Committee on Labor and Public Welfare who shall not be members of the same political party and who shall be appointed by the President of the Senate.

(9) Two members of the House Committee on Interstate and Foreign Commerce who shall not be members of the same political party and who shall be appointed by the Speaker of the House of Representatives.

(10) Seven members appointed by the Secretary of Health, Education, and Welfare who are not in the employment of the Federal Government and who are physicians, other health professionals, or scientists representing the various specialties and disciplines involved with diabetes mellitus and related endocrine and metabolic diseases.

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(11) Five lay members appointed by the Secretary of Health, Education, and Welfare from the general public, including at least one person with diabetes and one parent of a diabetic child. These persons shall be drawn from such groups as the voluntary health agencies dealing with diabetes and related endocrine and metabolic diseases, educators, business and industry leaders, and representatives of the communications media.

(c) The members of the Board shall select a chairperson from among those members who are not employees of the Federal Government.

(d) The Board shall

(1) appoint and fix the compensation of an Executive Director, Assistant Director and such additional staff personnel, not to exceed three, as it deems necessary for the performance of the Board functions, without regard to the provisions of title 5, United States Code, governing appointments in the competitive service, and without regard to chapter 51 and subchapter III of chapter 53 of such title relating to classification and General Schedule pay rates, but at rates not in excess of the maximum rate for GS-18 of the General Schedule under section 5332 of such title; and

(2) procure temporary and intermittent services to the same extent as is authorized by section 3109 of title 5, United States Code.

(e) The Board is authorized

(1) to adopt, amend, and repeal rules and regulations governing the manner of its operations, organization, and personnel;

(2) to enter into contracts or other arrangements or modifications thereof, with any government, any department, agency, or independent instrumentality of the United States, or with any person, firm, association, or corporation, and such contracts or other arrangements, or modifications thereof, may be entered into without legal consideration, without performance or other bonds, and without regard to section 3709 of the Revised Statutes, as amended (41 U.S.C.5);

(3) to make advance, progress, and other payments which the Board deems necessary under this Act without regard to the provisions of section 3648 of the Revised Statutes, as amended (31 U.S.C.529); and

(4) to take such other action as may be necessary to carry out its functions under this section.

(f) The Office of the Assistant Secretary for Health of the Department of Health, Education, and Welfare shall, to the extent permitted by law and to the extent needed to carry out the purposes of this Act, provide the Board with necessary administrative services and facilities, including but not limited to the services of professional and support staff, necessary office space, and equipment.

(g) Members of the Board who are officers or employees of the Federal Government shall serve as members of the Board without compensation in addition to that received in their regular public employment. Members of the Board who are not officials of the Federal Government shall each receive the daily equivalent of the rate for grade GS-18 of the General Schedule for each day (including travel time) they are engaged in the performance of their duties as members of the Board. All members of the Board shall be entitled to reimbursement for travel, subsistence, and other necessary expenses incurred by them in the performance of their duties as members of the Board.

(h) (1) Those individual members of the Board designated in subsections b(1-7) of this section shall serve ex officio for the full life of the Board.

(2) Those individual members of the Board designated in subsections b(8 and 9) shall serve for the full life of the Board unless their Congressional term of office expires prior to the expiration of the life of the Board, in which case the appropriate Congressional official shall appoint a successor of the same political party to serve for the remainder of the life of the Board.

(3) Those individual members of the Board designated in subsections b(10 and 11) shall be appointed for terms of either two or three years. Six of these members shall be appointed initially for terms of three years, to be succeeded by members appointed

for two years. Six of these members shall be appointed initially for terms of two years, to be succeeded by members appointed for three years.

(i) Only those individuals who are members of the Board shall be permitted to vote on matters which require decisions by the Board.

(j) The Board shall review, evaluate, and advise with regard to the implementation of the Long-Range Plan to Combat Diabetes Mellitus of the National Commission on Diabetes. In carrying out this function the Board shall recommend those additional administrative policies and legislative proposals that it finds necessary to ensure (1) the success of the Long-Range Plan to Combat Diabetes Mellitus and (2) the most effective utilization and organization of national diabetes resources.

(k) (1) The Board may engage in and sponsor such activities, collect such data, provide such technical assistance as it deems advisable and necessary to enable it to perform the functions required by subsection (j).

(2) These activities may be undertaken by the Board, its staff, and working committees of the Board which may, from time to time, be established by the chairperson of the Board. Such working committees shall be composed of Board members and nonmember consultants with expertise in the particular areas addressed by such committees.

(l) The full Board shall hold regular quarterly meetings. In addition, the full Board or any of its working committees may hold such additional meetings as are necessary in order to enable the Board to carry out its activities.

(m) For each year that the Board is in operation, two months prior to the transmission of the President's budget to Congress, the Board shall submit simultaneously to both the Administration and to Congress an "Annual Diabetes Report."

(1) Such Report shall (A) describe the Board activities for the prior year, (B) describe and evaluate progress made during the previous year in diabetes research, treatment, and education with specific reference to the Long-Range Plan to Combat Diabetes Mellitus, (C) and describe the Board's proposed activities for the next year.

(2) Such Report shall also include (A) a detailed budget analysis of current diabetes-related activities of the Federal Government, and (B) suggest recommended expenditures for the forthcoming fiscal year.

(3) Such Report should also discuss recommended technical refinements in the Long-Range Plan to Combat Diabetes Mellitus necessitated by developments in the field.

(4) The Annual Diabetes Report shall be made available to the public at the same time it is transmitted to Congress and the Administration.

(n) The Commission shall cease to exist five (5) years after the date of its first meeting unless renewed or extended by Congress.

(o) There are authorized to be appropriated to carry out the purposes of this section $500,000 for fiscal year 1976 and such additional sums as are necessary for each of the four years thereafter.

DISTINGUISHED SCIENTIST AWARDS

SEC. 4. (a) There is hereby established in the National Institutes of Health a category of awards known as "Distinguished Scientist Awards" (hereinafter in this section referred to as the "awards").

(b) The awards shall be made by the Secretary of Health, Education, and Welfare to individual scientists who have shown continuous and outstanding productivity in research related to diabetes.

(c) The awards shall be made to these individuals for a period not to exceed a maximum of ten (10) years for the purpose of enabling these individuals to continue their research efforts in areas such as the following: basic research on insulin and related hormones and metabolism, etiology of diabetes, epidemiology of diabetes, pancreas and islet transplantation, microangiopathy, treatment of juvenile diabetes, obesity and nutrition, and diabetic retinopathy and basic physiologic studies of the eye as they relate to diabetes.

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(d) The amount of each award shall be $35,000 per year.

(e) During fiscal year 1976, four (4) awards may be made by the National Institute for Arthritis, Metabolism, and Digestive Diseases and one (1) award may be made by the National Eye Institute. During fiscal year 1977 the numbers shall be eight (8) and two (2), respectively; during fiscal year 1978, twelve (12) and three (3), respectively; during fiscal year 1979, sixteen (16) and four (4), respectively; and during fiscal year 1980 and each year thereafter the numbers shall be twenty (20) and five (5), respectively.

(f) The Secretary shall, with the assistance of the Directors of the National Institutes of Health, promulgate rules and regulations governing the selection of those individual scientists to receive the awards.

(g) There are authorized to be appropriated $175,000 for fiscal year 1976, $350,000 for fiscal year 1977, $525,000 for fiscal year 1978, $700,000 for fiscal year 1979, and $875,000 for fiscal year 1980 and each year thereafter.

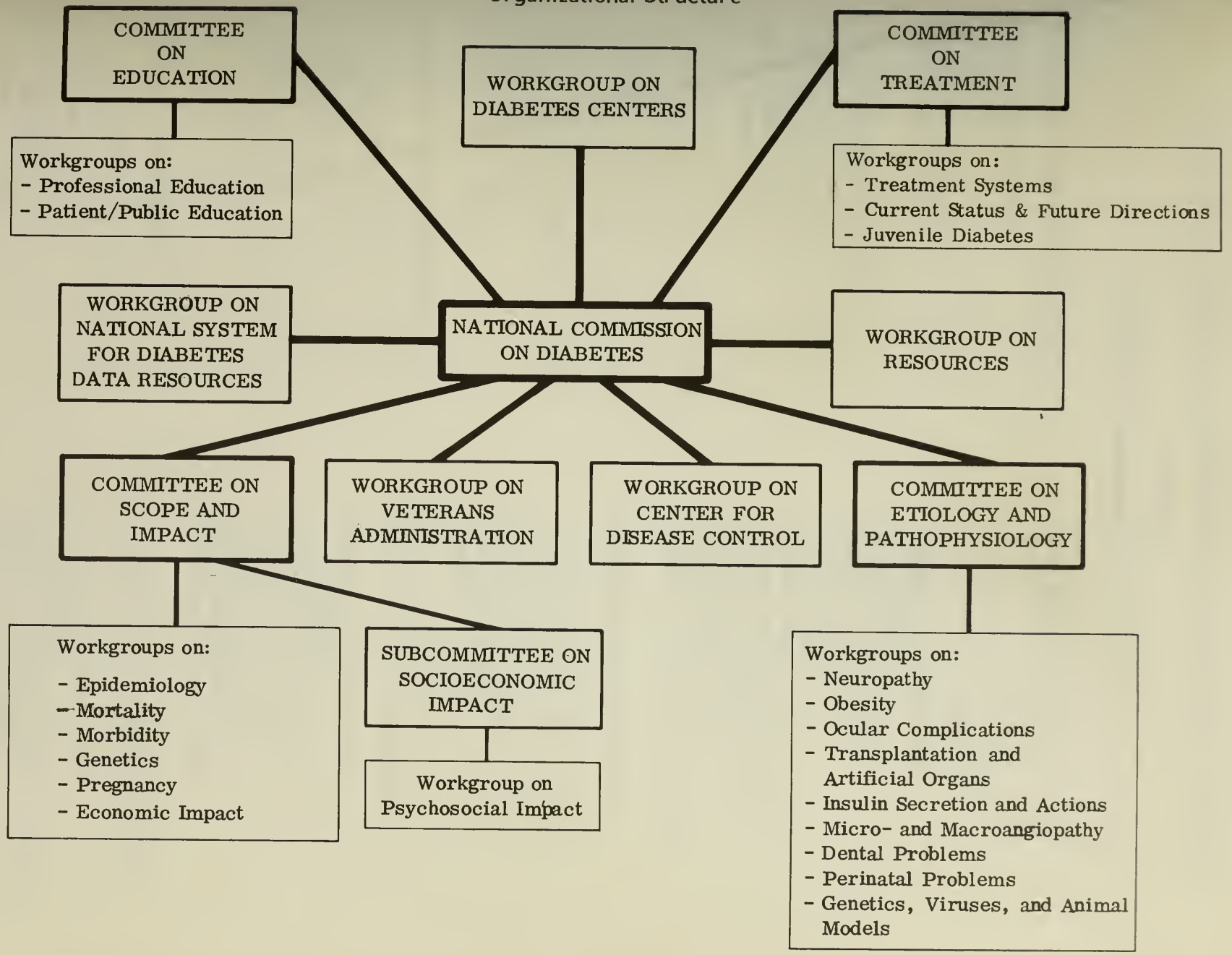
(h) Funds appropriated to carry out the purposes of this section for any fiscal year shall remain available for such purposes for the fiscal year immediately following the fiscal year for which they were appropriated.

FUNDS FOR DIABETES RESEARCH AND TRAINING CENTERS

SEC 5. Section 435 (c) of the Public Health Service Act is amended to read as follows:

"(c) There are authorized to be appropriated to carry out this section $8,000,000 for fiscal year ending September 30, 1977, $12,000,000 for fiscal year ending September 30, 1978, $20,000,000 for fiscal year ending September 30, 1979, $20,000,000 for fiscal year ending September 30, 1980, and $20,000,000 for fiscal year ending September 30, 1981."

NATIONAL COMMISSION ON DIABETES
Organizational Structure



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The Commission also gratefully acknowledges the many other contributors too numerous to lis whose reports, insights, and advice served as basis for the entire Report of The National Co mission on Diabetes.

Public Law 93-354
93rd Congress, S. 2830
July 23, 1974

An Act

To amend the Public Health Service Act to provide for greater and more effective efforts in research and public education with regard to diabetes mellitus.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

National Diabetes Mellitus Research and Education Act.

SHORT TITLE

SECTION 1. This Act may be cited as the "National Diabetes Mellitus Research and Education Act". 42 USC 289c-2 note.

FINDINGS AND DECLARATION OF PURPOSE

SEC. 2. (a) The Congress makes the following findings: 42 USC 289c-2 note.

(1) Diabetes mellitus is a major health problem in the United States which directly affects perhaps as many as ten million Americans and indirectly affects perhaps as many as fifty million Americans who will pass the tendency to develop diabetes mellitus to their children or grandchildren or to both.

(2) Diabetes mellitus is a family of diseases that has an impact on virtually all biological systems of the human body.

(3) Diabetes mellitus is the fifth leading cause of death from disease, and it is the second leading cause of new cases of blindness.

(4) The severity of diabetes mellitus in children and most adolescents is greater than in adults, which in most cases involves greater problems in the management of the disease.

(5) The complications of diabetes mellitus, particularly cardiovascular degeneration, lead to many other serious health problems.

(6) Uncontrolled diabetes mellitus significantly decreases life expectancy.

(7) There is convincing evidence that the known prevalence of diabetes mellitus has increased dramatically in the past decade.

(8) The citizens of the United States should have a full understanding of the nature of the impact of diabetes mellitus.

(9) The attainment of better methods of diagnosis and treatment of diabetes mellitus deserves the highest priority.

(10) The establishment of regional diabetes research and training centers throughout the country is essential for the development of scientific information and appropriate therapies to deal with diabetes mellitus.

(11) In order to provide for the most effective program against diabetes mellitus it is important to mobilize the resources of the National Institutes of Health as well as the public and private organizations capable of the necessary research and public education in the disease. 88 STAT. 373

(b) It is the purpose of this Act to— 88 STAT. 374

(1) expand the authority of the National Institutes of Health to advance the national attack on diabetes mellitus; and

(2) as part of that attack, to establish a long-range plan to—

(A) expand and coordinate the national research effort against diabetes mellitus;

(B) advance activities of patient education, professional education, and public education which will alert the citizens of the United States to the early indications of diabetes mellitus; and

(C) to emphasize the significance of early detection, proper control, and complications which may evolve from the disease.

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DIABETES PLAN

National Commission on Diabetes. Establishment. 42 USC 289c-2 note.

SEC. 3. (a) The Director of the National Institutes of Health shall, within sixty days of the date of the enactment of this section, establish a National Commission on Diabetes (hereinafter in this section referred to as the "Commission").

Membership.

(b) The Commission shall be composed of seventeen members as follows:

(1) The Directors of the seven Institutes referred to in subsection (e).

(2) Six members appointed by the Secretary of Health, Education, and Welfare from scientists or physicians who are not in the employment of the Federal Government and who represent the various specialties and disciplines involving diabetes mellitus and related endocrine and metabolic diseases.

(3) Four members appointed by the Secretary of Health, Education, and Welfare from the general public. At least two of the members appointed pursuant to this paragraph shall be diabetics or parents of diabetics.

The members of the Commission shall select a chairman from among their own number.

Director and personnel

(c) The Commission may appoint an executive director and such additional personnel as it determines are necessary for the performance of the Commission's functions.

Compensation.

(d) Members of the Commission who are officers or employees of the Federal Government shall serve as members of the Commission without compensation in addition to that received in their regular public employment. Members of the Commission who are not officers or employees of the Federal Government shall each receive the daily equivalent of the rate in effect for grade GS-18 of the General Schedule for each day (including traveltime) they are engaged in the performance of their duties as members of the Commission. All members of the Commission shall be entitled to reimbursement for travel, subsistence, and other necessary expenses incurred by them in the performance of their duties as members of the Commission.

5 USC 5332 note.

Travel expenses.

(e) The Commission shall formulate a long-range plan to combat diabetes mellitus with specific recommendations for the utilization and organization of national resources for that purpose. Such a plan shall be based on a comprehensive survey investigating the magnitude of diabetes mellitus, its epidemiology, and its economic and social consequences and on an evaluation of available scientific information and the national resources capable of dealing with the problem. The plan shall include a plan for a coordinated research program encompassing programs of the National Institute of Arthritis, Metabolism, and Digestive Diseases, the National Eye Institute, the National Institute of Neurological Diseases, the National Heart and Lung Institute, the National Institute of General Medical Sciences, the National Institute of Child Health and Human Development, and the National Institute of Dental Research, and other Federal and non-Federal programs. The coordinated research program shall provide for—

88 STAT. 374

88 STAT. 375

Investigation, studies and research programs.

(1) investigation in the epidemiology, etiology, prevention, and control of diabetes mellitus, including investigation into the social, environmental, behavioral, nutritional, biological, and genetic determinants and influences involved in the epidemiology, etiology, prevention, and control of diabetes mellitus;

(2) studies and research into the basic biological processes and mechanisms involved in the underlying normal and abnormal phenomena associated with diabetes mellitus, including abnormalities of the skin, cardiovascular system, kidneys, eyes, and nervous system, and evaluation of influences of other endocrine

hormones on the etiology, treatment, and complications of diabetes mellitus;

(3) research into the development, trial, and evaluation of techniques and drugs used in, and approaches to, the diagnosis, treatment, and prevention of diabetes mellitus;

(4) establishment of programs that will focus and apply scientific and technological efforts involving biological, physical, and engineering science to all facets of diabetes mellitus;

(5) establishment of programs for the conduct and direction of field studies, large-scale testing and evaluation, and demonstration of preventive diagnostic, therapeutic, rehabilitative, and control approaches to diabetes mellitus;

(6) the education and training of scientists, clinicians, educators, and allied health personnel in the fields and specialties requisite to the conduct of programs respecting diabetes mellitus;

(7) a system for the collection, analysis, and dissemination of all data useful in the prevention, diagnosis, and treatment of diabetes mellitus;

(8) appropriate distribution of resources between basic and applied research.

The long-range plan formulated under this subsection shall also include within its scope related endocrine and metabolic diseases and basic biological processes and mechanisms, the better understanding of which is essential to the solution of the problem of diabetes mellitus.

(f) In the development of the long-range plan under subsection (e), attention shall be given to means to assure continued development of knowledge, and dissemination of such knowledge to the public, which would form the basis of future advances in the understanding, treatment, and control of diabetes mellitus.

Hearings.

(g) The Commission may hold such hearings, take such testimony, and sit and act at such time and places as the Commission deems advisable to develop the long-range plan required by subsection (e).

Budget estimates.

(h)(1) The Commission shall prepare for each of the Institutes whose programs are to be encompassed by the plan for a coordinated diabetes research program described in subsection (e) budget estimates for each Institute's part of such program. The budget estimates shall be prepared for the fiscal year ending June 30, 1976, and for each of the next two fiscal years.

Budget estimates from HEW, transmittal to congressional committees.

(2) Within five days after the Budget for the fiscal year ending June 30, 1976, and the Budget for each of the next two fiscal years is transmitted by the President to the Congress the Secretary shall transmit to the Committees on Appropriations of the House of Representatives and the Senate, the Committee on Labor and Public Welfare of the Senate, and the Committee on Interstate and Foreign Commerce of the House of Representatives an estimate of the amounts requested for each of the Institutes for diabetes research, and a comparison of such amounts with the budget estimates prepared by the Commission under paragraph (1).

88 STAT. 375

88 STAT. 376

Final report to Congress.

(i)(1) The Commission shall publish and transmit directly to the Congress (without prior administrative approval) a final report within nine months after the date funds are first appropriated for the implementation of this section. Such report shall contain the long-range plan required by subsection (e), the budget estimates required by subsection (h), and any recommendations of the Commission for legislation.

Termination.

(2) The Commission shall cease to exist on the thirtieth day following the date of the submission of its final report pursuant to paragraph (1) of this subsection.

Appropriation.

(j) There are authorized to be appropriated to carry out the purposes of this section $1,000,000.

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DIABETES MELLITUS PREVENTION AND CONTROL PROGRAMS

86 STAT. 748.
42 USC 247b.

SEC. 4. Section 317 of the Public Health Service Act is amended—

(1) by striking out "communicable disease control" each place it occurs and inserting in lieu thereof "communicable and other disease control";

(2) by striking out "communicable diseases" in subsection (a) and inserting in lieu thereof "communicable or other diseases";

(3) by striking out "communicable disease program" in subsection (a) and inserting in lieu thereof "communicable or other disease control program";

(4) by striking out "communicable disease" in subsection (b) (2) (C) (i) and inserting in lieu thereof "communicable or other disease";

(5) by striking out "Rh disease," in subsection (h) (1) and by inserting "diabetes mellitus and Rh disease and" before "tuberculosis" in that subsection; and

(6) by striking out "COMMUNICABLE" in the section heading.

RESEARCH AND TRAINING CENTERS; DIABETES COORDINATING COMMITTEE AND GENERAL AUTHORITY

64 Stat. 443; 86 Stat. 162.
42 USC 289.

SEC. 5. (a) Part D of title IV of the Public Health Service Act is amended by adding at the end thereof the following new sections:

"DIABETES RESEARCH AND TRAINING CENTERS

42 USC 289c-2.

"SEC. 435. (a) Consistent with applicable recommendations of the National Commission on Diabetes, the Secretary shall provide for the development, or substantial expansion, of centers for research and training in diabetes mellitus and related endocrine and metabolic disorders. Each center developed or expanded under this section shall (1) utilize the facilities of a single institution, or be formed from a consortium of cooperating institutions, meeting such research and training qualifications as may be prescribed by the Secretary; and (2) conduct (A) research in the diagnosis and treatment of diabetes mellitus and related endocrine and metabolic disorders and the complications resulting from such disease or disorders, (B) training programs for physicians and allied health personnel in current methods of diagnosis and treatment of such disease, disorders, and complications, and (C) information programs for physicians and allied health personnel who provide primary care for patients with such disease, disorders, or complications. Insofar as practicable, centers developed or expanded under this section shall be located geographically on the basis of population density throughout the United States and in environments with proven research capabilities.

88 STAT. 376
88 STAT. 377

Report to Congress.

"(b) The Secretary shall evaluate on an annual basis the activities of centers developed or expanded under this section and shall report to the Congress (on or before June 30 of each year) the results of his evaluation.

Appropriation.

"(c) There are authorized to be appropriated to carry out this section $8,000,000 for fiscal year ending June 30, 1975, $12,000,000 for fiscal year ending June 30, 1976, and $20,000,000 for fiscal year ending June 30, 1977.

"DIABETES COORDINATING COMMITTEE

Diabetes Mellitus Coordinating Committee. Establishment.
42 USC 289c-3.

"SEC. 436. For the purpose of—

"(1) better coordination of the total National Institutes of Health research activities relating to diabetes mellitus; and

"(2) coordinating those aspects of all Federal health programs and activities relating to diabetes mellitus to assure the adequacy

and technical soundness of such programs and activities and to provide for the full communication and exchange of information necessary to maintain adequate coordination of such programs and activities,

the Director of the National Institutes of Health shall establish a Diabetes Mellitus Coordinating Committee. The Committee shall be composed of the Directors (or their designated representatives) of each of the Institutes and divisions involved in diabetes-related research and shall include representation from all Federal departments and agencies whose programs involve health functions or responsibilities as determined by the Secretary. The Committee shall be chaired by the Director of the National Institutes of Health (or his designated representative). The Committee shall prepare a report as soon after the end of each fiscal year as possible for the Director of the National Institutes of Health detailing the work of the Committee in carrying out the coordinating activities described in paragraphs (1) and (2)."

Chairman.

Report.

(b) Section 434 of the Public Health Service Act is amended by adding at the end the following new subsection:

86 Stat. 162.
42 USC 289o-1.

"(d) The Director of the National Institute of Arthritis, Metabolism, and Digestive Diseases, working through the Associate Director for Diabetes (if that position is established), shall (1) carry out programs of support for research and training in the diagnosis, prevention, and treatment of diabetes mellitus and related endocrine and metabolic diseases, and (2) establish programs of evaluation, planning, and dissemination of knowledge related to research and training in diabetes mellitus and related endocrine and metabolic diseases."

ASSOCIATE DIRECTOR FOR DIABETES

SEC. 6. The Secretary of Health, Education, and Welfare may establish within the National Institute of Arthritis, Metabolism, and Digestive Diseases the position of Associate Director for Diabetes who would report directly to the Director of the Institute and who, under the supervision of the Director of the Institute, would be responsible for programs with regard to diabetes mellitus within the Institute.

42 USC 289c-1a.

Approved July 23, 1974.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 93-894 accompanying H.R. 12417 (Comm. on Interstate and Foreign Commerce). and No. 93-1147 (Comm. of Conference).
SENATE REPORT No. 93-653 (Comm. on Labor and Public Welfare).
CONGRESSIONAL RECORD:
Vol. 119 (1973): Dec. 20, considered and passed Senate.
Vol. 120 (1974): Mar. 19, considered and passed House, amended, in lieu of H.R. 12417.
July 9, House agreed to conference report.
July 10, Senate agreed to conference report.

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DISCRIMINATION PROHIBITED — Title VI of the Civil Rights Act of 1964 states: "No person in the United States shall on the ground of race, color, sex, age, or national origin, be excluded from participation in, be denied the benefit of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." Therefore, the National Commission on Diabetes Mellitus, like every program or activity receiving financial assistance from the Department of Health, Education, and Welfare, must be operated in compliance with this law.

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DHEW Publication No. (NIH) 76-1018

Report of the

National Commission on Diabetes

to the Congress of the United States

Volume II

CONTRIBUTORS TO THE DELIBERATIONS OF THE COMMISSION

Part 1

PUBLIC TESTIMONY

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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
National Institutes of Health

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"The National Diabetes Mellitus Research and Education Act" (Public Law 93-354), signed by the President on July 23, 1974, directed the appointment of a National Commission on Diabetes whose charge was to formulate a long-range plan of research and education to combat diabetes mellitus. The Commission submitted its report to Congress on December 10, 1975.

REPORT OF THE NATIONAL COMMISSION ON DIABETES

Volume I - The Long-Range Plan to Combat Diabetes

Volume II - Contributors to the Deliberations of the Commission

Part 1 - Public Testimony (Public Hearings 1-5)

Part 2 - A. Public Testimony (Public Hearing 6 and Interviews)

B. Biographical Sketches of Commission Members and Consultants

Volume III - Reports of Committees, Subcommittees, and Workgroups

Part 1 - Scope and Impact of Diabetes (I)

Part 2 - Scope and Impact of Diabetes (II)

Part 3 - Etiology and Pathology of Diabetes

Part 4 - Treatment of Diabetes

Part 5 - Diabetes Education for Health Professionals, Patients, and the Public

Part 6 - Workgroup Reports

A. Diabetes Research and Training Centers

B. Veterans Administration Programs for Diabetes

C. Center for Disease Control: Diabetes Control Programs

D. National System for Diabetes Data Resources

E. Federal Resources

Volume IV - Supporting Materials to the Commission Reports

A. Summary of Federal Health Legislation Pertaining to Diabetes

B. Summary of Diabetes Program Funding

C. Special Reports

Report of the

National Commission on Diabetes

to the Congress of the United States

Volume II

CONTRIBUTORS TO THE DELIBERATIONS
OF THE COMMISSION

Part 1

PUBLIC TESTIMONY

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
National Institutes of Health
DHEW Publication No. (NIH) 76-1019

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VOLUME II

CONTRIBUTORS TO THE DELIBERATIONS OF THE COMMISSION

PART I

Public Testimony
(Public Hearings 1 - 5)

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PUBLIC TESTIMONY

Introduction

The success of a medical research program that aims to prevent, treat, and cure disease depends upon all participants -- patients, their families, the entire health care team, basic scientists, and the general public--understanding one another's needs and talents and cooperating in achieving the goals of the health program. The Commission therefore considered input from the general public and from the diabetic population equally valuable to its deliberations in formulating a national plan for diabetes as the suggestions of the scientific consultants and workgroup members.

To provide every citizen the opportunity to express the views, ideas, and recommendations he believes would help the Commission carry out its charge from Congress, the Commission provided the opportunity for public testimony in six major metropolitan areas widely distributed about the country. The time and place of these public hearings were as follows:

Bethesda	April 23, 1975
Philadelphia	May 1, 1975
Los Angeles	May 8, 1975
Seattle	May 10, 1975
Atlanta	July 7, 1975
Chicago	August 4, 1975

All meetings were announced in the Federal Register and in other media to ensure the opportunity of testifying to as many people as possible.

Concerned that the setting of these hearings was such that the poor and educationally deprived diabetic person might be unaware of or unable to participate in them, the Commission sent representatives out to the people and taped interviews with them in their settings. Portions of these tapes were played before the full Commission and made part of the public record. Transcriptions of these tapes are included in this report, but identities are kept anonymous by request of those interviewed.

The testimonies described various needs: prevention and cure of diabetes, prevention of complications, instructional materials on diet in foreign languages, programs of patient and public education, more rehabilitation centers for the visually handicapped, more health professionals specializing in diabetes, and many others. The ideas from the public testimony had a significant impact on the findings of the committees, and are referenced in the text of their reports.

Still other informal statements in the form of letters were received from individuals and from industrial companies interested in the problem of diabetes; their names are listed in this volume.

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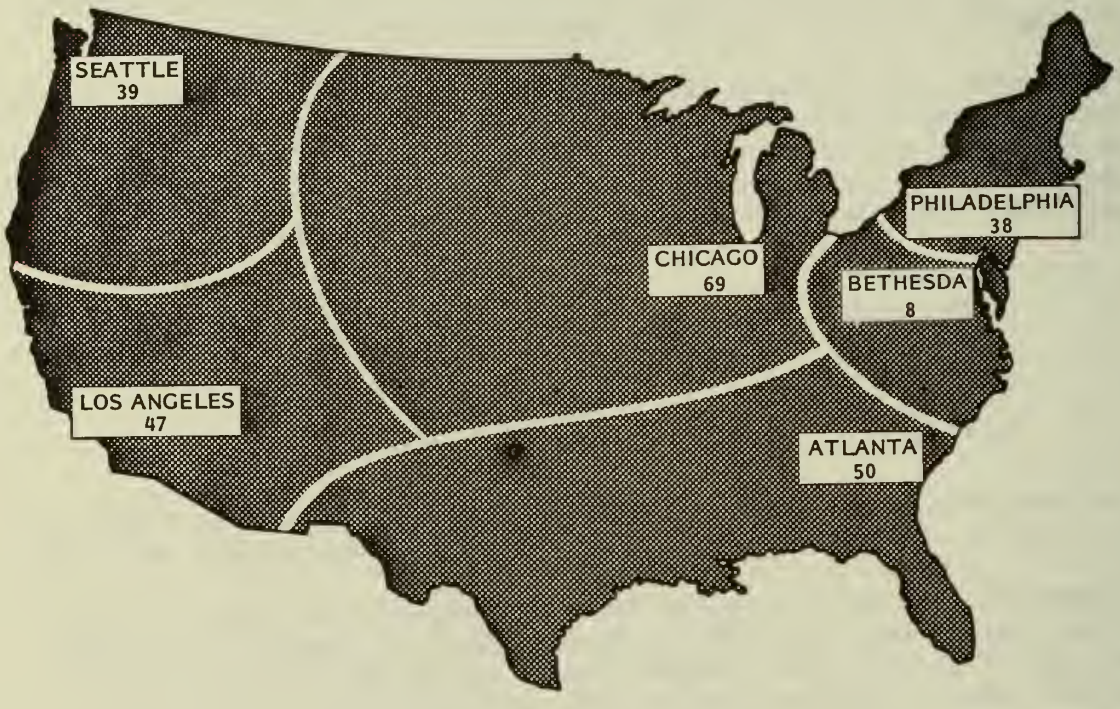
A total of 251 people, representing themselves and organizations, submitted statements, most of which were presented orally. The testimonies contained in this volume represent the views of a large segment of the nation's population interested in diabetes, and should serve as a valuable resource document for those who will implement the Long-Range Plan.



Locations of Public Hearings and Numbers of Testimonies at the Hearings

NATIONAL COMMISSION ON DIABETES

Building 1, Wilson Hall
National Institutes of Health
Bethesda, Maryland
April 21 - 23, 1975

Public Hearing Number One

Wednesday, April 23, 1975

Public Testimony, Statement Included	The Honorable Guy Vander Jagt Mr. Erwin J. Lurie Mrs. Dina Merrill Robertson Dr. Malcolm M. Martin Mrs. Joan Hoover Mr. Thomas L. Kugel Mrs. Patricia Leapley, R.D.
Statement Submitted without Personal Testimony	Mrs. Gloria King Rostich

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Testimony Presented to the
National Commission on Diabetes
by: The Honorable Guy Vander Jagt
Congressman, Ninth District,
Michigan

Congressman Guy Vander Jagt (9th Distribt, Michigan)
Statement to National Commission on Diabetes
National Institutes of Health, Bethesda, Maryland
April 23, 1975

As one of the prime sponsors of legislation culminating in the enactment of Public Law 93-354 and the creation of the National Commission on Diabetes, I am honored to appear here this morning as the lead-off public witness in this important series of hearings in Washington, Philadelphia, Los Angeles and Seattle on the subject of diabetes. I believe that this Commission will have an enormous impact on Federal health policy-making in the years ahead, and that it will accelerate the national response, both public and private, to the needs of the diabetic population.

I do not wish to speak at length, or to detract from the precious minutes available to other public witnesses who have statements that you should hear. I was privileged to participate actively in the legislative deliberations on diabetes. I will leave to others more qualified the task of discussing current and desirable initiatives in diabetes research and treatment. However, I would like to comment briefly on certain implications of the Commission's vital work.

First, I am delighted that you have scheduled these public hearings around the country, and that witnesses will include not only public and private health professionals but also concerned citizens who personally live with diabetes or are aware of its debilitations through the experiences of family or friends. I hope that your inquiry will focue not only upon the needs of researchers who are participating in or leading the search for a means of preventing diabetes' onset or curing this disease, but will also be responsive to the very practical problems which diabetics face in their daily lives. I look to your Commission to awaken public interest in diabetes and to provide the stimulus for greatly expanded public education and detection programs throughout the Nation.

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An individuals' development of diabetes at any age must concern us all. But during the lengthy process associated with the enactment of this legislation, I became increasingly aware of the severe hardships which diabetic children or adolescents confront. I received countless letters from parents and grandparents, as well as many from young diabetics themselves, detailing the severity of their affliction and describing the regimentation with which they must live. These people are reaching out, placing their hopes for a better life in this Commission and in the Congressional initiative through which it was formed.

I am concerned about the problems facing young diabetics who lack the financial advantages of children of middle and upper income parents. Under the greatest of advantages, diabetes is never easy to cope with. There are serious psychological consequences and social complications which stem from this disease. There is deep fear of what the future may bring. There is the extraordinary self-discipline which is demanded of the diabetic. I believe that we must redouble our efforts to minimize the hardships and suffering of all young people who develop the disease, helping them to cope with their affliction and enabling them to live as normally as possible. They must be able to look forward with optimism to the promise of their adult years.

The statute which created this Commission describes in careful detail the extensive scope of its inquiry. Given the very tight time constraints of the statute, yours is a formidable task. Yet, yours is an enviable task, for your undertaking will prove beneficial to millions of people.

As you work toward the development of a long-range plan for diabetes, I urge you to keep foremost in mind the need to achieve maximum utilization of existing health resources within the Federal government, the State and local health agencies and our many private health centers. At a time of severe Federal budget restraints and a time of inflated health costs, we must look to existing agencies and programs to meet new health tasks as they are defined. The Congress, in adopting the diabetes legislation, committed itself to respond more effectively to the needs of diabetics. The long-range plan which you will develop and the budget estimates which you will present to Congress will assist legislators to meet that commitment. But in today's competition for Federal health dollars, this Commission can have inestimable value if it is able to mobilize existing resources toward greater responsiveness to the diabetic population. In short, if you are able to encourage the administrators of various Federal health and social service programs to ask themselves how they could utilize their resources to meet the needs of diabetics, you will have achieved significant progress.

I do not mean to slight the importance of intensifying basic scientific research, for the ultimate answers to diabetes lie in endeavors of this nature. But as the search goes on, the need to improve patient care remains great. I urge you to offer recommendations to meet the social and psychological problems of diabetics, to point the way to improved detection and education activities, strengthen statistical resources, and address the other elements of coorindated and comprehensive health policy.

Mr. Chairman and members of the Commission, thank you again for your invitation to appear this morning. I wish you every success as you carry forward to implementation Congress' expressed desire to develop a more effective Federal response to diabetes.

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Testimony Presented to the
National Commission on Diabetes
by: Erwin J. Lurie

MR. CHAIRMAN, MEMBERS OF THE COMMISSION, LADIES AND GENTLEMEN.

I'D LIKE TO EXPRESS MY APPRECIATION FOR THIS OPPORTUNITY TO APPEAR BEFORE THE NATIONAL COMMISSION ON DIABETES, AND, AS NATIONAL CHAIRMAN OF THE JUVENILE DIABETES FOUNDATION'S BOARD OF DIRECTORS, TO EXTEND ON BEHALF OF THE FOUNDATION'S OFFICERS AND OUR MANY THOUSANDS OF MEMBERS ACROSS THE NATION, OUR SINCEREST GRATITUDE TO EACH OF YOU FOR YOUR VITAL INTEREST, AND YOUR EFFORTS IN INITIATING AND COORDINATING THE PROVISIONS OF THE HISTORIC DIABETES MELLITUS RESEARCH AND EDUCATION ACT.

THE JUVENILE DIABETES FOUNDATION IS A NON PROFESSIONAL LAY ORGANIZATION OF DIABETICS, PARENTS OF DIABETICS AND FRIENDS SPREAD ACROSS THE COUNTRY IN 47 CHAPTERS. THROUGH OUR EFFORTS PRIVATE FUNDS ARE BEING MARSHALLED TO EXPAND VITALLY NEEDED RESEARCH IN DIABETES. DURING THE FISCAL YEAR, AFTER PEER REVIEW BY OUR MEDICAL ADVISORY BOARD, WE HAVE ASSISTED IN THE FUNDING OF 10 DIABETES RESEARCH PROJECTS AT LEADING RESEARCH CENTERS, AND, WE HAVE FUNDED 3 POST DOCTORAL RESEARCH FELLOWSHIPS IN DIABETES AT 3 LEADING UNIVERSITIES.

I, AND OTHER REPRESENTATIVES OF THE JUVENILE DIABETES FOUNDATION, WHO WILL APPEAR IN PUBLIC TESTIMONY, AS YOUR COMMISSION HOLDS ITS HEARINGS AROUND THE COUNTRY, COME IN THE SPIRIT OF HOPE, RESPECT, COOPERATION AND UTMOST DETERMINATION FOR THE SUCCESS OF THIS MOST VITAL PROJECT. IN THAT SPIRIT, EACH OF US WILL BE EXPRESSING OUR RESPECTIVE THOUGHTS ON THE PRIORITIES WE BELIEVE ARE MANDATED BY THE DIABETES ACT, AND WE OFFER ANY ASSISTANCE WE CAN PROVIDE, AS YOU UNDERTAKE YOUR ENORMOUS RESPONSIBILITIES.

THE UNDERLYING BACKGROUND IN FORMULATING THE DIABETES ACT RECOGNIZED THE TREMENDOUS GROWTH IN OUR DIABETIC POPULATION AND THE FRIGHTENING ASPECTS OF ITS CONTINUED GROWTH. THE KNOWN PREVALENCE OF DIABETES HAS DOUBLED IN THE PAST DECADE. THE ACT ITSELF CHARGES THIS COMMISSION TO "FORMULATE A LONG RANGE PLAN TO COMBAT DIABETES MELLITUS WITH SPECIFIC RECOMMENDATIONS FOR THE UTILIZATION AND ORGANIZATION OF NATIONAL RESOURCES FOR THAT PURPOSE." IN ESSENCE, YOU WILL BE SHAPING THE DIRECTION AND ESTABLISHING THE PRIORITIES OF OUR GOVERNMENT'S EFFORTS IN THE FIGHT AGAINST DIABETES UNDER THE ACT. THUS, WE SEEK TO ASSURE, IN EVERY CONSTRUCTIVE WAY, THAT THE FULL INTENT AND PURPOSE OF THE ACT ARE EMPLOYED IN THE BEST INTEREST OF ALL PRESENT AND FUTURE DIABETICS IN AMERICA.

I AM ALSO HERE AS A VITALLY CONCERNED BUSINESS EXECUTIVE, WHO IS DEEPLY AWARE OF THE APPALLING IMPACT OF DIABETES ON OUR ALREADY OVERSTRAINED ECONOMY. SURELY, EACH MEMBER OF THIS COMMISSION IS INTIMATELY FAMILIAR WITH ALL OF THE EXPERT TESTIMONY BEFORE THE SENATE SUBCOMMITTEE ON HEALTH, BACK IN 1973, WHICH DRAMATICALLY ESTABLISHED THE VITAL NEED FOR THE DIABETES ACT. WE KNOW FROM THAT TESTIMONY THAT DIABETES IS A MAJOR PUBLIC HEALTH HAZARD AND WITH ITS GROWING HOSPITALIZED POPULATION PROBABLY THE GREATEST HEALTH CARE AND DISABILITY COST PROBLEM IN OUR COUNTRY TODAY. THE UNCONSCIONABLE COST TO OUR NATION AND TO EACH OF US TAX PAYERS, RESULTING FROM ILLNESS AND HEALTH CARE DUE TO DIABETES, IS A NATIONAL DISGRACE. EACH EXPERT WHO TESTIFIED ON THIS SUBJECT ACKNOWLEDGED THAT THEIR RESPECTIVE FIGURES CAN ONLY BE INTERPRETED AS SIGNIFICANTLY UNDERESTIMATING THE SITUATION. WE WERE GIVEN MINIMAL COST FIGURES RANGING FROM 2.6 BILLION DOLLARS IN 1969 TO 3.4 BILLION IN 1973. AMONG THE "INDIRECT" COSTS LISTED JUST FOR THE YEAR 1969, IS A FIGURE REPRESENTING 73,000 MAN YEARS OF LOST WORK. I KNOW YOU SHARE MY ALARM AT THIS ENORMOUS WASTE, NOT ONLY OF BILLIONS OF DOLLARS EACH YEAR, BUT

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THE MORE TRAGIC WASTE OF A VAST SHARE OF OUR PRECIOUS HUMAN RESOURCES.

THOSE OF US, HOWEVER, WHO HAVE KNOWLEDGE OF POLITICAL FORCES, UNDERSTAND THE MORE RAPID RESPONSE OF OUR LEGISLATORS TO COLD ECONOMIC FACTS. WE URGE, THEREFORE, THAT AN INTEGRAL AND PROMINENT PART OF YOUR FINAL REPORT CLEARLY INDICATE NOT ONLY THE BEST AVAILABLE CURRENT PICTURE OF THIS DRAIN ON OUR NATIONAL ECONOMY, BUT THE YEARLY PROJECTED COSTS OF BILLIONS AND BILLIONS OF DOLLARS, UNTIL THE DAY THE BLIGHT OF DIABETES IS ENDED.

IN MY THIRD ROLE, TODAY, WHICH BEST REFLECTS MY DEEP PERSONAL INTEREST IN YOUR EFFORTS AS WELL AS MY WORK WITH THE JUVENILE DIABETES FOUNDATION, I AM HERE AS A VERY CONCERNED PARENT OF A DIABETIC. MY YOUNGEST SON, NOW 18, WHO I LOVE AS MUCH AS ANY FATHER LOVES HIS SON, IS AN INTELLIGENT, ACTIVE, CREATIVE AND GENERALLY WONDERFUL YOUNG MAN, WHO FOR OVER EIGHT YEARS HAS BEEN SUBJECTED TO TWO INSULIN SHOTS A DAY AND ALL OF THE OTHER PHYSICAL, DIETARY AND EMOTIONAL LIMITATIONS IMPOSED ON A GROWING YOUNGSTER BY THIS ALLEGEDLY "OKAY" DISEASE. FORTUNATE AS I AM IN HAVING THE FINANCIAL ABILITY TO PROVIDE HIM WITH THE BEST MEDICAL CARE NOW AVAILABLE, WE ALL KNOW FIRST HAND, <u>THE TERRIBLE INADEQUACY OF CURRENT METHODS OF TREATMENT</u>, AND WE KNOW TOO WELL THE PROBABLE CONSEQUENCES HE FACES AS HE APPROACHES THE BEST AND MOST PRODUCTIVE YEARS OF HIS LIFE. SURELY, THERE'S NO SHAME IN ADMITTING THAT THE LOVE FOR MY SON, IN COMBINATION WITH THAT SAME DEGREE OF LOVE AND MUTUAL CONCERN, SHARED BY THE MANY THOUSANDS OF PARENTS WHO MAKE UP THE BACKBONE OF THE JUVENILE DIABETES FOUNDATION, IS THE <u>MOTIVATING FORCE BEHIND OUR RELENTLESS DETERMINATION TO ASSURE THAT SIGNIFICANT, PRACTICAL, SCIENTIFIC PROGRESS IS MADE AS RAPIDLY AS POSSIBLE</u>.

WE OF THE JUVENILE DIABETES FOUNDATION, ARE A NATIONWIDE ARMY OF DEDICATED VOLUNTEERS WITH BUT ONE DEADLY EARNEST PURPOSE IN THIS

CAUSE. AND WE WILL NOT RELENT. RESEARCH CAN ARREST THE COMPLICATIONS AND CURE THE DISEASE.

LADIES AND GENTLEMEN OF THIS COMMISSION, THE JUVENILE DIABETES FOUNDATION MEMBERSHIP, WITH ITS PERSONAL MOTIVATIONS, IS MADE UP OF PRACTICAL, INTELLIGENT AND EFFECTIVE PEOPLE FROM ALL PARTS OF THIS NATION, WHO ARE CAPABLE OF JUDGING THE REALITIES OF ANY GIVEN SITUATION AND OF RESPONDING IN A MEANINGFUL AND CONSTRUCTIVE MANNER. WE ARE DEEPLY AWARE THAT OUR GOAL -- TO ASSURE THAT SUFFICIENT MONIES WILL BE FORTHCOMING, IN THE SHORTEST POSSIBLE TIME, TO FUND THE SCIENTIFIC RESEARCH NECESSARY, TO LEARN THE CAUSE OF AND TO ULTIMATLEY FIND A CURE FOR DIABETES -- MAY NOT BE ACHIEVED IN THE NEAR FUTURE. BUT WE ALSO KNOW THAT IT HAS BEEN THE PATTERN OF THIS NATION TO PROCRASTINATE ON PROBLEMS EVEN WHEN WE SEE THEM COMING, AND IT'S ONLY AFTER THEY BECOME SO BURDENSOME AND SO ACUTE AND EVEN SO VIOLENT THAT FINALLY SOME CONSTRUCTIVE RESPONSE IS MADE. WE ARE DETERMINED, THAT BEFORE VISUAL IMPAIRMENT, BLINDNESS, HEART ATTACKS, KIDNEY FAILURE AND ALL OF THE OTHER DEBILITATING COMPLICATIONS OF DIABETES, RAVAGES THE POPULATION OF THIS COUNTRY IN EPIDEMIC PROPORTION, WE WILL HAVE BEEN THE ONE, RESPONSIBLE ORGANIZATION WHOSE MAIN EFFORT -- AND EXTRA DRIVE -- HELPED PREVENT ANOTHER NATIONAL HEALTH DISASTER. WE APPEAL TO THIS COMMISSION, TO FORCIBLY RESPOND TO THIS RESPONSIBILITY, TO SET IN MOTION RESEARCH PROGRAMS WHICH WILL HELP AVOID THAT DISASTER.

THUS, AS YOU REVIEW EVERY ASPECT OF THIS PROBLEM AND YOU CONSIDER THE MANY AREAS THAT THE ACT PROVIDES FOR, THE PRIORITIES YOU RECOMMEND MUST BE THOSE WHICH WILL LEAD, MOST RAPIDLY, TO A GREATER KNOWLEDGE OF THE DISEASE PROCESS AND ITS POTENTIAL CURE. THE URGENCY IN TAKING THAT DIRECTION IS MANIFEST IN THE AXIOM THAT AS DIABETICS LIVE LONGER, THEY ARE HEIR TO MORE AND MORE COMPLICATIONS.

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ALL OF US IN THIS ROOM ARE MORE THAN FAMILIAR WITH THE MANY SERIOUS PROBLEMS AFFECTING THE DIABETIC, YET I AM PERIODICALLY JOLTED BY BITS OF INFORMATION THAT CROSS MY DESK. JUST THIS PAST MONTH, IN THE MARCH ISSUE OF "DIABETES OUTLOOK", THERE WAS A BRIEF ITEM REPORTING THAT AMONG ONE THOUSAND SURGICAL PATIENTS SURVEYED AT THE TEMPLE UNIVERSITY MEDICAL CENTER IN PHILADELPHIA, 250 WERE NEWLY DIAGNOSED DIABETICS. I KNOW THAT ONE SHOULD NOT EXTRAPOLATE A GENERAL CONCLUSION FROM SO LITTLE INFORMATION, YET I COULD NOT HELP WONDERING IF WE ARE, INDEED, ALREADY APPROACHING THE EPIDEMIC PROPORTIONS WE FEAR FOR THE FUTURE. IN ONE AREA DISCUSSED WITHIN THAT SAME ARTICLE, THE INCIDENCE OF AMPUTATIONS AMONG DIABETICS -- HAVE SURPASSED THE EPIDEMIC LEVEL, WHEN WE READ THAT SOME 90% OF ALL AMPUTATIONS, ARE PERFORMED ON DIABETICS, WHO PRESENTLY MAKE UP BUT 5% OF THE POPULATION.

I DO NOT UNDERESTIMATE THE NEED OF TREATMENT CENTERS, TRAINING OR EDUCATION -- BOTH PUBLIC AND PROFESSIONAL. NOR DO I ARGUE IN ANYWAY WITH ALL OF THE AREAS OF CONCERN YOU WILL BE INVESTIGATING AND MAKING RECOMMENDATIONS FOR IN YOUR FINAL REPORT. WHAT WE ASK, HOWEVER, IS THAT THRUST OF YOUR RECOMMENDATIONS, ACCOMPANIED BY BUDGET ESTIMATES REFLECTING THAT PRIORITY, SHOW AN ESSENTIAL CONCERN FOR EMPHASIS BY EACH RESPECTIVE INSTITUTE, ON BASIC RESEARCH DIRECTED TOWARD A MORE FUNDAMENTAL UNDERSTANDING OF THE CAUSES AND THE POTENTIAL CURE FOR DIABETES. I BELIEVE THAT WHAT WE CONSIDER THE MOST MEANINGFUL AND POTENTIALLY PRODUCTIVE RESEARCH IS BEST SUMMED UP IN ITEM 2, UNDER SUB-SECTION (e) OF THE ACT, FROM WHICH I QUOTE, "STUDIES AND RESEARCH INTO THE BASIC BIOLOGICAL PROCESSES AND MECHANISMS INVOLVED IN THE UNDERLYING NORMAL AND ABNORMAL PHENOMENA ASSOCIATED WITH DIABETES MELLITUS, INCLUDING ABNORMALITIES OF THE SKIN, CARDIOVASCULAR SYSTEM, AND EVALUATION OF INFLUENCES OF OTHER ENDOCRINE HORMONES ON THE ETIOLOGY, TREATMENT, AND

COMPLICATIONS OF DIABETES MELLITUS".

WE KNOW THAT YOUR CONCERN FOR THIS PROBLEM PARALLELS OURS. WITH TWO PARENTS OF DIABETIC CHILDREN AND A DIABETIC ON THE COMMISSION, THE SENSE OF URGENCY WE FEEL, IS AN INTEGRAL PART OF THE WISDOM OF THOSE WHO SHAPED THE MAKEUP OF THIS COMMISSION. IT IS OUR HOPE, THEREFORE, THAT AS YOU CONSIDER, ALL OF THE VOLUMINOUS DATA THAT WILL COME BEFORE YOU DURING THESE NINE MONTHS AND LISTEN TO THE VOICES OF THOSE WHO WILL TESTIFY AS REPRESENTATIVES OF THE HUGE DIABETIC POPULATION OF AMERICA, BECAUSE OF, AND FOR WHOM THIS ACT CAME INTO BEING, YOU WILL SHAPE YOUR RECOMMENDATIONS AND PRIORITIES TO MEET THEIR NEEDS. THERE CAN BE NO OTHER VALID RESPONSE TO THE TASK YOU ARE CHARGED WITH UNDER THIS ACT. AND, IN SO, DOING, THE FINAL LEGACY OF THIS COMMISSION WILL STAND FOR GENERATIONS TO COME AS A PLAN WHICH SET THE FOUNDATION FOR ELIMINATING A DEBILITATING AND KILLING SCOURGE, NOW RAMPANT THROUGHOUT OUR GREAT NATION. I CAN THINK OF NO FINER LEGACY.

IN CLOSING, MAY I OFFER THE THOUGHT THAT IT IS OUR FAITH IN THE PROVEN SCIENTIFIC, GOVERNMENTAL AND ECONOMIC CAPACITY OF THIS NATION, THAT MOTIVATES US, TO ACTIVELY ACCELERATE THE DRIVE FOR RESEARCH. WE SINCERELY BELIEVE THAT WITH YOUR DIRECTION, THE BREAKTHROUGH WE ALL SEEK <u>CAN BE</u> ACHIEVED IN REASONABLE TIME. YOUR POSITIVE AND DYNAMIC RESPONSE TO OUR PLEA CAN BE THE BEGINNING.

THANK YOU.

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Testimony Presented to the
National Commission on Diabetes
by: Mrs. Dina Merrill Robertson
Eve Siegal Association

DR. CROFFORD, DISTINGUISHED MEMBERS OF THE COMMISSION, FRIENDS ... I'M DINA MERRILL ROBERTSON -- AND I THANK YOU FOR THE OPPORTUNITY TO SHARE WITH YOU, BRIEFLY, MY THOUGHTS FOR TODAY.

AS SOME OF YOU MAY KNOW, MY SON DAVID WAS A JUVENILE DIABETIC FROM THE TIME HE WAS 14. HE DIDN'T LIVE LONG ENOUGH TO FACE THE DEBILITATING CONSEQUENCES OF DIABETES -- THE LIKELIHOOD OF BLINDNESS... OF AN EARLY HEART ATTACK, OR STROKE ... OF KIDNEY DISEASE ... AND THE OTHER COMPLICATIONS THAT SO MANY DIABETICS KNOW FIRSTHAND.

DAVID DIED IN AN ACCIDENT TWO SUMMERS AGO. BUT EVEN IN THE TEN YEARS HE FOUGHT DIABETES, I WATCHED THIS VITAL, EXUBERANT, WONDERFUL YOUNG MAN GRAPPLING, EACH DAY, WITH THE STRICTURES, THE UNCERTAINTIES, AND THE FEARS OF THIS COMPLICATED, AND DESTRUCTIVE DISEASE. AND I HURT FOR HIM -- THEN, AND EVEN MORE FOR WHAT I KNEW HE WOULD PROBABLY FACE IN THE YEARS AHEAD.

THAT IS WHY, FOR ALL THE DAVIDS STILL FIGHTING, I WANT, WITH ALL MY HEART, FOR MEDICAL SCIENCE TO FIND THAT CURE FOR DIABETES. AND I, FOR ONE, WON'T REST UNTIL THAT DAY COMES.

AS A MEMBER OF THE BOARD OF DIRECTORS OF THE JUVENILE DIABETES FOUNDATION, I ASK YOU, MEMBERS OF THE COMMISSION, TO MAKE FUNDS FOR RESEARCH A PRIORITY RECOMMENDATION IN YOUR REPORT. FOR WHILE TREATMENT CENTERS AND EDUCATION PROGRAMS ARE VITALLY IMPORTANT AND, INDEED, MUST BE EXPANDED AND BETTERED ... I KNOW THE PAIN AND FRUSTRATION WHEN YOU CAN PROVIDE THE BEST MEDICAL CARE -- AS I COULD FOR MY SON DAVID -- AND EVEN THEN, YOU CANNOT PROTECT A PERSON FROM THE ONSLAUGHT OF

DIABETES. ONLY APPROPRIATE SCIENTIFIC RESEARCH CAN CHANGE THAT.

I REMEMBER ANOTHER TERRIBLE DISEASE THAT STRUCK FEAR IN MY HEART, AS IT DID IN THE HEARTS OF PARENTS ALL OVER THE WORLD, WHEN MY SONS WERE YOUNGSTERS. YOU REMEMBER IT, I'M SURE. IT WAS POLIO. AND IF IT WASN'T FOR THE MASSIVE SUPPORT OF RESEARCH THAT, FINALLY, BROUGHT US THE SALK VACCINE, WE WOULD STILL BE LIVING WITH IT -- AND EVERY PARENT WOULD STILL SHUDDER AT ITS NAME. FOR WITHOUT FUNDAMENTAL RESEARCH, WE MIGHT HAVE HAD BETTER TREATMENTS, MORE EFFICIENT IRON LUNGS, GREATER PUBLIC AWARENESS OF THE AWFUL CONSEQUENCES OF THE DISEASE. BUT WE WOULD HAVE STILL HAD POLIO.

WE DON'T. AND I HOPE WE WILL SEE OUR WAY CLEAR TO FIGHTING DIABETES IN THE SAME WAY. AGGRESSIVELY, YES, EVEN RUTHLESSLY. SO THAT IT, TOO, WILL ONE DAY, AS SOON AS HUMANLY POSSIBLE, BECOME A THING OF THE PAST.

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Testimony Presented to the
National Commission on Diabetes
by: Dr. Malcolm M. Martin
Georgetown University Medical
Center

Though diabetes mellitus is one of the oldest diseases known to man, there is pathetically little information concerning its etiology, pathogenesis or pathophysiology. Whether the dreaded ophthalmological, cardiovascular and renal complications are the result or the concomitant of the metabolic disorder remains in dispute. Even the importance and relevance of control of the blood sugar is hotly contended by many authorities.

Diabetes mellitus is the most common endocrine-metabolic disorder and it is estimated to affect from 2 to as many as 10 per cent of the American population, including one in every 1000 children. It is the third leading cause of blindness, and ranks eighth in the leading causes of death. It accounts for an estimated 38.8 million days of restricted activity annually including 19.9 million days spent in bed and 2.9 million days lost from school or work. The annual cost of diabetes to the U.S. economy has been put at more than 2 billion dollars. Hence it is indeed high time that a concerted effort be organized and directed to deal with this major health problem and stop the drain on our financial resources.

The need is great for information concerning the etiology of this disease for undoubtedly the ultimate answer to diabetes lies in prevention rather than therapy. Funds for research deserve high priority and not only to the well-known "giants" in the field, but more importantly to the young and unknown enthusiasts who may just have the right ideas. It behoves us all to remember that insulin was discovered by a medical student not yet graduated and a young as yet unheard of M.D. However, many others, I am sure, will speak out on the need for research and so I should like to turn to a less glamorous yet nevertheless equally important and I fear much neglected aspect of the diabetic scene, namely training and education. Until our miraculous cure is at hand we shall still need physicians to take care of our millions of diabetics including children and educate them and their families.

Evidence is accumulating with increasing forcefulness that diabetes in children and young adults is a different disease to diabetes in the middle-aged and elderly patient, and this bears emphasizing. Not only are nutritional requirements different and constantly changing, exercise more erratic and emotional swings less predictable, but the very cause of the disease in children may well be different. So called adult-onset diabetes, albeit asymptomatic, can be recognized

in children. Juvenile-onset diabetes in contrast is always symptomatic and all such children are insulin deficient, insulin sensitive and insulin dependent. In childhood diabetes the complications may well be true complications rather than concomitants and related to inadequacy of diabetic control, a proposition rapidly gaining concurring support from clinical observations and animal experimental studies. The difficulties in the long-term management of diabetes in the child are so numerous that only too often the disease is managed inadequately. It is so much easier and emotionally more acceptable to treat the diabetic child so as to satisfy the parents and the patient rather than impose restrictions and make demands necessary for better control. Yet careful management is particularly essential in the young who still have to live their lives, to ensure soundness of body as well as of mind, promote normal growth and development so that they will mature liking themselves despite their disability, and delay at least, if not prevent the late degenerative complications which so inexorably creep up upon them. Yet the average, well trained pediatrician sees only a few diabetic children and has little expertise in their management. Only a handful of pediatricians have had the training to care for children with diabetes so that most children tend to be referred to adult diabetologists well qualified in the treatment of the adult patient, but ill-equipped to deal with children and the problems peculiar to the pediatric age group, who also by and large look upon children as miniature adults. As a result the children, who need and deserve the very best care and management to safeguard normal growth, development and maturation, both physically and emotionally, to ensure healthy well-adjusted productive adults, in fact get the worst of medical care.

To correct this deficiency it is important that programs be established for pediatricians to train in the area of childhood diabetes. There is great need for knowledgeable physicians to care for children with diabetes and provide the investigators of tomorrow. Without prejudice to basic research it should be remembered that the impetus to most progress in medicine has come from the bedside observation and clinical research.

A final comment must be made concerning education, particularly in relation to the child with diabetes. Childhood diabetes is more than a disease of a child. It engulfs the whole family, particularly with respect to the interrelationship of the child who is affected with the parents and siblings.

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The ramifications are endless and in the absence of careful attention to the whole family, the results are often devastating. Social workers, nutritionists and psychologists must be enlisted early with the family which has a diabetic child in order to educate and help in the necessary adjustments and not as is usual at present, when the family no longer is able to cope with the situation and threatens to disintegrate. We urgently need Diabetes Centers for care, education, training and research. These Diabetes Centers require an experienced staff of physicians, nutritionists and psychologists to take care of the diabetic child and its family, train physicians, educate families and advance knowledge so as to develop new approaches and new insights into this chronic disorder which is the cause of much morbidity and mortality in our midst.

Malcolm M. Martin, MD,FRCP,FACP,FAAP
Professor of Pediatrics
Georgetown University Medical Center

Testimony Presented to the
National Commission on Diabetes
by: Ms. Joan Hoover
National Committee on
Diabetes in Youth

TO: National Commission on Diabetes - Oscar Crofford, M.D., Chairman

FROM: Joan Hoover, Vice Chairman, National Committee on Diabetes in Youth, ADA; President, Washington, D. C. Parents of Diabetics

My name is Joan Hoover. I have been working with diabetic children in many capacities since 1966. I am Vice Chairman of the National Committee on Diabetes in Youth, ADA, and President of the Washington, D. C. Parents of Diabetics.

There is an aspect of diabetes care that has been badly neglected and needs to be brought to the attention of this Commission. The problem I refer to is the psychological well-being of the diabetic adolescent. There are about 300,000 kids in this group, and the reason we care about their mental health is that by and large they're not handling their diabetes very well. What's more, they can't and won't take proper care of their diabetes until they can overcome the way that they feel about it.

Adolescence is a difficult time at best, but for the diabetic all problems are intensified. At a time when they are attempting to plan their future, diabetes makes it look pretty bleak. They are beset by a multitude of anxieties; about physical problems ... What if I become blind? Can I have a healthy baby? Will I be impotent? etc., about financial problems ... Will I be able to get and hold a good job? Will I continue to be a financial burden to my parents? Can I get hospital and life insurance?, about social problems ... Who will marry me? Can I live alone? etc., and of course there is that ultimate bugaboo of the teen years, being thought different. Special diets, shots and the fear of an ill timed insulin reaction do nothing to induce tranquility.

So how do these kids handle this excess burden of psychological pressure? Many different ways. Many simply deny their diabetes, refuse to take shots, drift in and out of acidosis and get pretty sick. Others withdraw or escape into fantasy. Some become self-destructive in one of several ways: over or under eating, or with drugs or alcohol. Some go even farther. Dr. Harold Cole, Director of the Pediatric Diabetes Clinic at Metropolitan Hospital in New York says, "Overt suicidal attempts are twice as common among adolescent diabetics as in association with any other single cause ... and the diabetic has the means readily at hand to carry out his threat."

We've done a pretty good job with the adjustment problems of the younger children with camp programs and parent education. The fine tuning of the physical care of the juvenile diabetic is well documented. But obviously we are failing our diabetic adolescent population. Dr. Marvin Ack of Minneapolis says, "Most current studies on the adjustment of children with severe chronic disease suggest that 40% to 50% are sufficiently distrubed to warrant immediate psychiatric care." Dr. Ian Burr of Vanderbilt says, "Management of the adolescent diabetic provides challenges not found in diabetics of other age groups, not because of the nature of the disease, the principles of management being the same as at other ages, but rather because of the difficulties encountered in the management of any chronic disease during the peripubertal period."

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Presuming we are in agreement that a problem exists, how do we go about finding a solution for it? There is virtually no literature on this subject. The National Library of Medicine lists six titles ... two of which are in Hungarian. For the layman there is nothing either. "Facts of Life for the Diabetic" has yet to be written, and there are 300,000 kids out there waiting to read it.

Aside from something to read, what every diabetic teen needs most is an understanding physician who will recognize when he is under stress (even without asking) and can refer him to the appropriate sort of counseling. And here I must add, to the physician who says "I treat the whole child." ... It's not working. So perhaps an important part of our program might be Physician Education, not only to heighten his awareness of the problem, but so that he will know what sort of services are available and recommended.

But now I am getting into your area of expertise. What I would like to ask of the Commission is that you establish a study group to consider the problems of the diabetic adolescent; to determine the scope of the problem, to see what sort of help is available, how more can be created and what sort of programs would assure these services being delivered to those who need them. If the study group does a good job, I'll be back later to ask you to implement those programs.

I would urge that this study group include any discipline concerned with both diabetes and adolescence. I was sorry to see that this Commission included no one from the National Institute of Mental Health. However, Dr. Robert Cohen from NIMH pointed out that Dr. Kretchmer has a good psychiatric division in the Institute of Child Health and could provide wise counsel. In the course of preparing this request I consulted several fine professionals and I will submit to you a list of their names as possible advisors to the study group.

Finally, on behalf of some good kids, let me remind you that diabetes is trouble enough. Please don't let them have to cope with the psychological problems alone. There must be something we can do other than just hope they'll outgrow it.

Testimony Presented to the
National Commission on Diabetes
by: Mr. Thomas L. Kugel

Good morning, Ladies and Gentlemen. My name is Thomas L. Kugel. I am President of the Washington Chapter of the Juvenile Diabetes Foundation, Member of the Research Committee of the National Foundation, a program planner and a management analyst with one of the Federal Government's major research organizations, and father of a 21 year old diabetic son.

First, on behalf of the Washington Chapter of JDF, and all Diabetics in the Washington area, I would like to welcome you to our fair city and to express our good wishes and thanks for the important work you are doing and will continue to do.

I do not need to tell you much about our organization. There are others in this room who have told or will tell you anything you want to know (and perhaps a bit more besides). There is one thing I will tell you, and so will all of the others of our organization who will be appearing before you. Put as simply as I can say it, it is our belief - and I think our growth over the last two years is proof of the truth of this belief - that the single, overriding, most important problem in Diabetes today, is the long-standing neglect of research - not education, not training, not publications, not screening programs - but research. I know that is a very strong statement. I know that neglect is a relative term, and that there is, and has been, research in Diabetes. But I think you will agree that my statement is more true than false. In any case, the clear and simple conclusion we draw from this is that Research in Diabetes and its complications

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should be the number one priority of the Federal Government's Diabetes program and that should be reflected in the recommendations of this commission. Should you have any doubt as to the meaning of that statement, let me say as clearly as I know how that this also means that training, publications, construction or staffing of Diabetes Centers (other than for research), screening programs, early detection, etc., are and should be other than first priority.

I am aware that Medical Schools in this country have been having a hard time of it in recent years, and that whatever these problems have been, they are, with inflation, undoubtedly worse. I am also aware that the Federal Government in its infinite wisdom has chosen this same time to "phase down" the indirect support it has in the past provided through training grants and other mechanisms. But as I look at the membership of this Commission I see four major Medical Schools represented directly (and I don't know how many others indirectly), two of the Diabetes centers, and I become concerned as to just how clearly the message about the priority status of research will be perceived. I submit to you, Ladies and Gentlemen, that the proper use of research funds is research and not training (except for researchers and then not to the exclusion of the research itself) and above all, not brick and mortar; not at this time. I believe that assuring the continued viability of the Nation's Medical Schools is highly desirable and so is the training of specialists in the treatment of diabetic patients. But the plight of the Medical Schools is not the proper concern of this commission, either directly or indirectly. And so I oppose, at this time, any further commitment to the proliferation of additional Diabetes Centers,

either of the type now funded by NIAMDD, or of the type contemplated by the Diabetes Research and Education Act, whatever the difference may be. I say "at this time" because I believe there is no conclusive evidence, if indeed there is any evidence at all, that the centers represent the best use of the Diabetes dollar; that there have been no startling breakthroughs in the state of the art in detection or treatment, and certainly none in cure, to be communicated to the next generation of physicians, thus far. I say "thus far", because, if we concentrate on research, we may have something to communicate, as I believe there will be. When there is, I will be in there with you, yelling for more money for training and for centers (hopefully somewhat better distributed geographically).

I oppose the extension of the Centers concept for another reason, too. As you know, many, if not most of the really important scientific discoveries, were partial, if not complete, accidents - fortunate accidents, educated accidents, but still accidents. Such an accident can happen anywhere and the best way to encourage such fortunate accidents is to increase the number of "anywheres". By channeling a major portion of available funds to only a few locations, which would happen because the Centers would require greater funds, the number of potential places for some researcher to stumble upon a major discovery would decrease instead of increase. In addition, there is an elusive but pervasive tendency for institutions, as they grow, to acquire structure and rigidity, to stifle creativity, to breed inflexibility, and worst of all to develop a sense of orthodoxy in the approach to problems, which is the death of innovation. The main lines of further research in Diabetes have not been settled yet. We need heterodox, or better still unorthodox, approaches. Excessive

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reliance on the Centers concept, at this time, is moving in the wrong direction. I will wager that the next major breakthrough in Diabetes is at least as likely to be at some obscure VA hospital as it is at Stanford, Chicago, Michigan or Duke (or Harvard, Vanderbilt, Alabama or Washington, for that matter) even with the differences in funding, and more likely if the funds are spread around more evenly. I am not suggesting fragmentation. I am suggesting excessive concentration be avoided.

One other reason for opposing the Centers is the unlovely games that Universities play - within or between states - as to which of them will acquire the latest plum that Washington is funding. We hope for better than that for Diabetes.

Let me turn to another subject. As you know, the Federal Government operates - spends its money - on a fiscal year basis, the fiscal year being from July 1 to June 30 the following year. What some of you may not know is that next Fiscal Year -FY 1976 - which begins about 2 months from now, the Fiscal Year is to be changed from July 1/June 30 to October 1/September 30. The practical effect of this is, that if you fail to make recommendations to the Congress for increases for Diabetes research in time to have an impact on the Fiscal Year that begins two months from now, you will for all practical purposes have lost the chance to effect any change in the Diabetes budget for a year and a half - until October 1976. The Appropriations Committees will begin hearings soon on the NIH budget, if they haven't started already. When both Houses complete their separate actions, they will meet to resolve the differences in a Conference Committee.

In all probability there will be very little chance of affecting the outcome of the NIH appropriation later than the middle of August, if that late. After that, there is only the Supplemental Appropriation process, which is a chancey proposition at best. PL 93-354, which gives you your charter, in Section 3.(h) directs you to prepare budget estimates for "the fiscal year ending June 30, 1976"(and beginning two months from now) and the next two fiscal years after that. The delay in naming this commission, coupled with the potential further delay involved if you fail to make recommendations for Diabetes research for FY 1976, could result in a total time of nearly two and a fourth years between the signing of the bill and the earliest time the Commission can have an impact--July 1974 to October 1976. A lot of research could be accomplished in that time, and maybe a breakthrough or two. If you can develop some kind of interim recommendations soon enough, you could cut that time to about a year.

Let me point out two other very interesting and important parts of PL 93-354. Section 3.(h)(2) directs the Secretary of HEW to send to Congress his comments on your recommendations for Fiscal Year 1976. Thus, it is clear you are expected to make recommendations for FY-1976. Section 3.(i)(1) directs you to transmit a final report, with budget recommendations, directly to the Congress. This does not preclude you from sending a report prior to a final report, and it authorizes you to transmit it directly to Congress (without prior administrative approval). As your colleagues, the Institute Directors can tell you, that is a very important provision, perhaps the most important in this Law. For that means that your recommendations will not be buried in any of the various graveyards that are

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normally used, never to be heard of again, as has happened to the recommendations of countless Study Commissions,such as this one, that have gone before you, but which did not have that magical provision. You have an opportunity that few are given. It would be tragic if you did not use it, or did not use it in time. If I had only one thing I could recommend to you, it would be to use this opportunity. You have two, and possibly three months in which to develop and transmit some recommendations; any recommendations would be better than none. If you don't have or can't get staff support to accomplish this, I'm sure that others will join JDF in volunteering some staff support to you for enough time to pull together some recommendations. And while you're at it, don't forget that your recommendations should be for a 15-month year.

I know there will be those who will say "Go easy; we are planning a Diabetes program for the long pull. Diabetes won't be cured overnight. Think of what half-baked recommendations will do to our credibility when we are ready to submit our final report. Better to go slow now and do the job right." My answer, and I will make it as strong as I can, is think of what your credibility among Diabetics will be if you don't. And that brings me to my next point.

Whenever we talk about Diabetes and research and training and Centers, we always seem to end up somehow talking about Doctors (and scientists) and their needs, and the needs of Medical Schools (or Universities). When do the needs of the Diabetic, and more importantly, his perception of his needs enter the discussion? Why does this Commission of 17 members have only four non-professionals (in the scientific or medical sense), and two of those are in allied health fields? Why in three days of hearings does this Commission set aside only one half day for the public, and that not exclusively for non-professionals? Why doesn't

this Commission establish advisory groups, as have other similar commissions, including lay advisory groups? I don't want to belabor the obvious, but for anyone with Diabetes or a child with Diabetes, it is all too clear that Diabetes is not the exclusive province of the Medical and Scientific professions. I might even go so far as to say, that as war is thought to be too important to be left to the generals, so Diabetes is too important to be left to the Doctors.

I would like to mention briefly several other points.

One, is the recommendation that additional funds be sought and earmarked for statistical types of research in Diabetes and its complications. As you all know such things as good hard numbers on incidence and prevalence, longevity, mortality, life expectancy, probability of complications, etc. are hard to come by and much needed.

Two, I recommend an Annual Report on Diabetes, at least as detailed as some of the disease-centered reports that NIH now provides the Congress, with its budget material. It should include descriptions of the actual coordination effected that the Diabetes Act requires.

Three, I recommend the establishment of improved professional communications channels - perhaps expanding the number of Journals devoted to Diabetes and its complications. The Commission probably can do little but foster and encourage this, but the attempt should be made.

Four, I recommend that the Commission foster and encourage the revision and expansion of the Medical School curriculum as it relates to Diabetes and particularly its complications, and the development of in-service training - refresher - programs for the practising physician on the same subjects.

Five, I believe that additional use should be made of commercial, profit-making research organizations. I have worked for two major non-profit

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research organizations and dealt with many others. Just because they don't make a profit, doesn't mean they are cheap. My experience has been that there are many excellent commercial research organizations doing high quality research. I do believe they tend to be better qualified to do development than research, and applied rather than basic research. But we should use the expertise available, wherever it may be.

Six, and I know this is very sensitive, I recommend that the Commission do what it can to bring more balance to the funding of the different Institutes.

This concludes my statement Ladies and Gentlemen. I hope that at a later date, when information is made available as to the current and proposed funding levels for Diabetes in the several Institutes of NIH, and within the time frame that I mentioned before, that I may submit specific budget recommendations for the record. I shall be more than happy to answer any questions you may have.

Testimony Presented to the
National Commission on Diabetes
by: Ms. Patricia M. Leapley

TO: National Commission on Diabetes - Oscar Crofford, M.D., Chairman

FROM: Patricia M. Leapley, Registered Dietitian, Board of Directors of the American Diabetes Association, Washington, D. C. Area Affiliate, and Vice Chairman, Patient Education Committee

Good morning, members of the Diabetes Commission and friends.

I am Patricia M. Leapley, a registered dietitian. I am currently on the Board of Directors of the American Diabetes Association, Washington, D. C. Area Affiliate and am Vice Chairman of their Patient Education Committee.

My remarks will stress the need for implementing Public Law 93-354, Section II, Diabetes Plan - part (2), ADA Forecast, September-October 1974, which states "The Commission shall formulate a long range diabetes plan to include a coordinated research program consisting of comprehensive basic and clinical investigations, of the education of scientists, physicians, and allied health personnel, and of the systematic collection and distribution of data regarding the prevention, diagnosis, and treatment of diabetes."

The need for a coordinated research program is of extreme importance. However, I would like to discuss the importance of education as it relates to this program.

All human beings are educators. Some have advanced degrees and some do not. Those who have advanced degrees in the medical field, travel through life trying to unravel and provide treatment for the imperfections that appear in the human body. These imperfections are more commonly referred to as diseases.

No matter at what age the disease arrives, a patient and his or her family appear before a physician and/or allied health professional waiting to receive information that will guarantee a long life free of complications regardless of the disease.

As a medical team we can give few guarantees simply because life offers few guarantees. However, what we can do, with the help of the Diabetes Commission, is to provide the diabetic patient and his or her family access to a well educated medical team lead by a physician. The team should include, in addition, registered nurses, registered dietitians and social workers who are trained in the field of education. Consultants representing the various complications in diabetes should be available as resource people.

At the present time, there are few effective medical teams in relation to the number of diabetics. Why? Let me discuss for a moment the word education. Members of the medical team are educated themselves, but do they all know how to educate others? Educators tell us that there are various types of learners and that learning can be achieved via language code, modality, and structure.

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Let us discuss this in relation to teaching the diabetic (juvenile or adult) and his or her family about nutrition. If a registered dietitian is not available, and usually she is not outside of the hospital environment, the patient is given a printed sheet with a meal plan and diet exchange lists on it. The giver assumes that the sheet is factual and thus easy to follow. However, when the patients go home they are so confused that they tuck the diet away and continue to eat what they please and thus never improve their nutritional state.

What happened to the education process? Did anyone determine what type of learner the patient was? Did anyone determine what the patient knew about normal nutrition before they began to modify his or her nutritional intake. What about the individual's own food preferences?

If someone did by chance complete all of the above, did they have the educational material available that would meet the needs of the patient?

What about continuing education for the diabetic? Many of us expect diabetics to learn all about the management of their diseases during their hospitalization. We seldom stop to realize that it took members of the medical team years to achieve our knowledge and we are still learning. Do you have continuing education programs in your communities for the diabetic patient and his or her family?

If you have a medical team, do you have a registered dietitian as a member? If not, who teaches normal and modified nutrition to the patient?

If your answer to these questions is "no," how many physicians around the country could also add "no." Many of these same physicians are asking what we can do about obesity.

In the Washington Metropolitan Area we have very few organized educational programs available for diabetics after they leave the hospital.

Although my remarks were addressed to the need for improving nutrition education for the diabetic, I feel that the need for providing continuing educational programs for physicians and other health professionals is extremely important. If researchers find the cure, what good will it do if the health educators can't communicate it to the diabetic patient.

I would like to say a word about the need for a systematic collection and distribution of data regarding the prevention, diagnosis and treatment of diabetes.

A sophisticated communications system, i.e., computers, needs to be developed so that interested individuals can readily retrieve information regarding diabetes education programs and research programs that are currently in existence around the country. Many hours of work could be eliminated if this information were available to health educators.

If the local affiliates are to have a role in the communications system, perhaps someone on the Commission needs to set up guidelines explaining the affiliate's responsibility to the patient and professionals in their localities. Maybe someone on the Commission needs to look into the differences in staffing of various affiliates and provide funds on a temporary basis to those who need to hire health professionals in order to improve communications and education.

Diabetes Research and Training Centers are needed now in the Washington Metropolitan Area if research, education and a systematic communications system are to function effectively as the "team" that will help lead us closer to "the cure" for Diabetes Mellitus.

We, as members of the medical team, are all in the People Business - Diabetes Mellitus is our product.

I'm not content with our present research, education and communications programs.

Will you, the Diabetes Commission, please help us pave a more successful path to "a cure."

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Testimony Presented to the
National Commission on Diabetes
by: Mrs. Gloria King Rostich

TO: National Commission on Diabetes - Oscar Crofford, M.D., Chairman

FROM: Gloria K. Rostick. A juvenile diabetic of 25 years duration and former Chief Research Dietition, Medical Metabolism Unit, Columbia College of Physicians and Surgeons, New York City.

I am writing the National Commission on Diabetes since I am unable to give oral testimony the day of your scheduled hearings. I feel certain specific areas in diabetes mellitus need to be investigated and/or treated more rigorously.

I am deeply concerned that funding and "ideal" direction be set up to deal with the problem of pregnancy and diabetes. As you know, country-wide the usual optimal survival of fetuses of diabetic mothers is 50%; at Joslin (Boston-Lying In Hospital for Women) fetal survival of diabetic mothers is over 90%.

I hope that both Priscilla White and Luke Gillespie will be invited to testify at the National Diabetes Act Hearings regarding the needs of these high risk mothers and the needs of their fetuses. Further, I would hope that their "ideal" and "optimal" care and follow-up of these patients would be used as a guide on a nationwide basis.

Country-wide, diabetics are seen once a month the first trimester and twice a month the second trimester and on a weekly basis for the third trimester until the diabetic mothers are delivered. In view of the changing insulin requirements, problem with keto-acidosis, etc., I frankly feel that it is crucial for these patients to be seen by a diabetic specialist and an obstetrician on a weekly or every other week basis from the onset of pregnancy, and that these patients be informed of symptoms of distress before the pregnancy goes "sour." An informed patient tends to be a well patient and a patient that is responded to tends to be a well patient in general and to have a better batting average in terms of fetal survival, in my opinion.

Further, I feel that it would be useful to hear from Henry Oppenheimer, M.D., St. Louis (i.e., Clayton) Missouri, regarding the types of diabetic pregnancies and how to deal with them. Patients need to be trained to keep records regarding menses but also records of intercourse in order to determine accurate dates for pregnancy in my opinion.

Regional centers need to be set up to deal with diabetics and their pregnancies and patients need to be referred to them. (I am appalled at the number of physicians, etc., who attempt delivery of pregnant diabetics who are not specialists and are totally inexperienced in this field). An informed staff is paramount.

Radio and TV publicity and information would be a tremendous help here, in my opinion.

A second thing I am concerned about - I wonder if the National Diabetes Act could pick up and/or continue that part of the study regarding children of diabetic mothers which had been conducted through the National Institutes of Health Collaborative Study on Cerebral Palsy, Mental Retardation and other Neurological and Sensory Disorders of Infancy and Childhood, through the National Institute of Neurological Disease and Stroke, Perinatal Research Branch. Perhaps they could study the heredity of juvenile diabetes mellitus and/or influence of Joslin type diet on children of diabetic mothers. I understand that the study is incomplete and would probably provide a tremendous fund of information on diabetic carriers, etc., if completed and followed up on, in my opinion.

The third and final item I would like to address in terms of the National Diabetes Act Hearing is the possibility of using the Latter Day Saints Genealogical Data Bank in Salt Lake City, Utah as a basis in checking out familial diabetes (as the National Cancer Institute is doing) with the possibility of researching viral etiology and/or dietary factors and onset of diabetes.

I am concerned that diabetes be an act of life, not an act of death.

Also can you establish an information center regarding diabetes and publicize it (particularly for the M.D.).

Submitted for: Gloria K. Rostick

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NATIONAL COMMISSION ON DIABETES

Philadelphia College of Physicians
Philadelphia, Pennsylvania
April 30, May 1 and 2, 1975

Public Hearing Number Two

Thursday, May 1, 1975

Telegrams	The Honorable Richard S. Schweiker
Public Testimony, Statement Included	Dr. Max Ellenberg
	Dr. Leo Krall
	Mr. Maurice Hertzfeld
	Ms. Joan Sherin
	Dr. Theodore Duncan
	Mr. Robert Selig
	Mr. Joe Solowiejczyk
	Mr. David Landis
	Mr. Myles Tanenbaum
	Mrs. Nettie Richter
	Mrs. Ellie Brief
	Mr. William Talbert
	Mr. Maurice Singer
	Dr. Robert Kaye
	Ms. Pollyann Toll
	Mrs. Elinor Silverman
	Dr. Peter H. Morse
	Mrs. Marian Allen
	Ms. Elizabeth E. Goffredi
	Ms. Lory M. Needelman
	Mrs. Joan Swenda
	Dr. John R. Williamson (read by Dr. Tony Scarpa)
	Dr. Elmer Funk, Jr.
	Mrs. Barbara A. Cavanaugh
	Mr. Ken Curtis
	Mr. Michael Welsh
	Ms. Jo Ellen Sax
	Ms. Connie Copeland
	Ms. Rita Castro
	Mrs. Edith Millman

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National Commission on Diabetes — Philadelphia, Penna.

Public Testimony, Statement Included	Ms. Suzanne M. Peterson Ms. Patricia M. Leapley
Statement Submitted without Personal Testimony	Dr. Arthur E. Helfand
Public Testimony without Written Statement	Mr. Samuel Fineman Mr. Carl Stenzler Mrs. Clara Roman

Testimony Presented to the
National Commission on Diabetes
by: Honorable Richard S. Schweiker
United States Senate

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PMS DR OSCAR CROFFORD CHAIRMAN NATIONAL COMMISSION ON DIABATES
C/O EXEC DIRECTORS OFC
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PHILA PA
I AM DISAPPOINTED I CANNOT JOIN YOU FOR THE HEARING TODAY
I SUPPORT YOUR EFFORTS TO DRAW NATIONAL ATTENTION TO THE EFFECTS
OF THIS DISEASE ON SO MANY AMERICANS YOUNG AND OLD AND TO EXPLORE
NEW WAYS OF DEALING WITH IT. I AM CONFIDENT YOUR WORK IN
CARRYING OUT THE PROVISIONS OF THE DIABETES ACT WILL PROVIDE THE
BLUEPRINT FOR AN EFFECTIVE, INNOVATIVE PROGRAM, WHICH WE ALL
AGREE IS ESSENTIAL IF WE ARE TO SUCCESSFULLY ELIMINATE THIS
MOST SERIOUS OF HEALTH PROBLEMS. PLEASE EXTEND MY BEST WISHES TO ALL
THE MEMBERS OF THE COMMISSION AND TO ALL THOSE PARTICIPATING
WITH YOU TODAY
RICHARD S SCHWEIKER UNITED STATES SENATOR

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330P EDT APRIL 30 1975
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Testimony Presented to the
National Commission on Diabetes
by: Dr. Max Ellenberg

My name is Max Ellenberg. I am President of the American Diabetes Association, Clinical Professor of Medicine at the Mount Sinai Medical Center and Attending Physician for Diabetes at the Mount Sinai Hospital.

I appreciate the privilege of being able to appear before you today. The American Diabetes Association is very much aware of the awesome responsibility that has been placed upon this Commission and the opportunity it has for pioneering in a field that has lain fallow too long.

I need hardly remind the members of this Commission of the enormity of the problem of diabetes. I feel that it is the number one health problem in this country because of the many millions of people who have this disease plus its explosive growth in an almost epidemic fashion, and the many serious complications associated with it.

The American Diabetes Association has long been the leading health group in this country concerned with diabetes, its treatment, cure and prevention. Until recently, it was a purely professional organization. However, to cope with the seriousness of the problem it changed to a voluntary health organization. It now includes lay people who have a full membership and full privilege of leadership. It is important to emphasize that the changeover became finalized only some two years ago so that the ADA in its present form is really a new two year old society. However, it has already shown a progressive, committed, vigorous, forward movement to meet the needs and challenges of diabetes.

The ADA is a network comprising over 50 Affiliates that is constantly growing and attempting to fill any existing voids. In this network there are large numbers of people involved with deep commitments who help bring the message of diabetes to the nation. The ADA and its Affiliates meet the rigorous requirements of the accounting procedures of the National Health Council of which it is a member. Also the ADA is a participant in the Federal Service Campaign, a recognition by the government of its National role in the fight against diabetes.

The ADA has a two-fold mission: 1) search for a cure and 2) a better life for diabetics while a cure is being procured. To achieve these aims we have a four point program: 1) Research 2) Professional education 3) Patient education 4) Public education.

Research

Research has had the largest growth rate in the budget of our program. It is interesting to note that expenditures for research are as follows:

1970	$208,000
1971	243,000
1972	269,000
1973	336,000
1974	802,000
1975	More than 1.25 million (estimated)

These figures point out some very important facts. It shows that when ADA became a voluntary health organization two years ago there began a sharp rise in research expenditures. Actually, the total amount spent by ADA and its Affiliates in 1974 represents the largest amount of money spent by any organization in this country for diabetes research. I emphasize money spent not just committed or approved. Raising money is not sufficient of itself. It is important, indeed mandatory, that these funds be spent in the most efficient and the most promising and productive manner. To accomplish this, we have a Research Committee of the highest and most sophisticated caliber available.

Their judgments are objective and completely independent and uninfluenced. The research funds are used to fund research projects but even more important for developing research awards for young investigators. Most recently we have set up Established Investigator Awards. The recipients of these will be guaranteed $37,000 every year for five years. This will enable them to free themselves of administrative problems and to conduct their research in a nonrestricted atmosphere. We consider the Award of Established Investigator to be a most significant approach to the research effort.

It is important to point out that one can not perform intensive research without the availability of sufficient manpower. It therefore becomes a matter of priority to interest young doctors and students in the problem of diabetes and thus generate the manpower necessary.

The ADA is concerned with other forms of research as well. Although less tangible, the publication of the Journal Diabetes which is now published once a month, is a medium of most important dissemination of research interests. It is a Journal of scientific merit that is recognized as the most outstanding of its kind in the world and is a unique contribution to research. In addition, there is an Annual Research Symposium devoted to a special subject each year. This is a multi-disciplinary meeting and invariably involves the outstanding scientists in the particular area under discussion. This again leads to remarkable increase in communication and dissemination of all available knowledge as well as new avenues of promise.

While the research is going on in an attempt to find a cure, we must not neglect the millions of people with diabetes. In this vein, it is somewhat disheartening but important to realize how far we are from a basic understanding of the disease that is necessary to lead to a cure. Therefore, all the more reason for trying to help our patients. The ADA is doing this in several ways.

Professional Education

We feel that this must begin in medical school where there must be a greater emphasis on diabetes. Following that, Postgraduate Courses become very important indeed. These are done not only at the National level where an Annual

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Postgraduate Course has been given for the past 23 years, but also at the Affiliate level. Such courses are given all over the country by large numbers of Affiliates to insure an ongoing increase in knowledge of the practicing physician. In this way, one can not only educate the practicing physician but also inform him of the newer advances, particularly in so far as they apply to the every day care of the patient. The ADA has also published three separate volumes on the problems of diabetes for the physician, and at the moment Volume No. 4 is in press.

The ADA, however, has gone much further. Realizing the importance of paraprofessionals such as nurses, dietitians, pharmacists, podiatrists, etc., we are now conducting Postgraduate Courses, Seminars, Symposia for these groups as well, since we realize that they are an indispensable and integral part of the diabetes team. In addition, they are now being welcomed into our organization on the same basis as physicians.

Patient Education

The great Dr. Joslin once said "He who knows most about his diabetes lives the longest." It is important to stress that diabetes is forever. The patient with diabetes must live with his disease 24 hours a day, 7 days a week, 52 weeks a year, every year of his life. It is essential, therefore, that he know as much of the practical aspects of day to day care as his physician and paramedical personnel. He must know how to manage his disease. He must be familiar with diet, insulin, hygiene, foot care, etc. He must know how to examine his urine and above all must know when he should contact his doctor.

Public Education

Although I am putting this as the fourth of our points, at the present time it deserves a degree of high priority. The apathy amongst the people of this country as regards diabetes is appalling. Diabetes is easily the least appreciated and underrated of any disease today. Most people believe that if a diabetic avoids sugar, takes insulin, or a pill, the problem is solved. In the words of Madison Avenue we must "sell diabetes to America". To do this we must "tell it like it is." I do not believe that this means scare or shock tactics which are self-defeating, but it must not permit hiding of the true facts.

I would suggest to this Commission that whatever roads it sees fit in its wisdom to take that the efforts carry with it a realization for the need of public arousal and that their labors be so directed as to make the public aware of the seriousness of diabetes. In regard to public information, this also includes the need to stimulate further legislative action so that bodies comparable to yours, and available funds will increase sharply.

Finally, we are also involved in trying to arrange Third Party Payments for diabetics including education and nutritional training. It is obvious that

in this area the golden rule applies. Namely, the person with the gold makes the rule. Thus the education of the Third Party Payers must get a high priority indeed, and we are actively engaged in so doing.

We feel that our four-point program is a solid approach to meeting the diabetes problem in all its present day aspects. I trust that this Commission will agree and accept its validity. We visualize a comprehensive role for the ADA working with the NIH in the area of field trials, model programs, training of investigators, etc. We have had the opportunity of observing and learning from our sister organizations in the voluntary health field, and believe we are now equipped to do for diabetes what we have seen done in other disease areas.

Please accept my thanks for permitting me to appear here today. Please be assured that the ADA is ready, willing and indeed anxious to be of help and of service to your August body and hope and pray for your success.

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Testimony Presented to the
National Commission on Diabetes
by: Dr. Leo Krall
Joslin Clinic

Preliminary Statement

I am here at this time to represent some of the Education activities of the American Diabetes Association, although the other hat of Director of the Education Division of the Joslin Diabetes Foundation must be quite obvious.

"Education" is one of the "Shibboleths" of our modern culture since everyone accepts its necessity and yet little is being done effectively in diabetes.

The Problem

There is absolutely no question regarding the importance of research, better patient care and all the other facets, but while waiting for the miracles and cures of the future, we have a responsibility to the probably 5,000,000 and possible potential 10,000,000 now alive in the United States alone. Unlike any other condition medically, the diabetic must have considerable knowledge simply to survive and perform his or her normal daily functions.

The lack of knowledge is taking a fearful toll in morbidity and mortality, to say nothing of crippling emotional distress among those with diabetes simply because it is <u>not</u> being well, or adequately done.

I am not merely concerned with the diabetics in some of the superb medical institutions in Mobile, Atlanta, Nashville, Los Angeles, or even Boston.

The fact is that probably 90% of the diabetics of the world are, and will always be treated by the general physicians of the world. This is as it should be, however this group is saddled with all the other multiple patient problems, and you must pardon a struggling physician who may treat 50 to 70 patients daily, if he either does not know, does not have the time, or thinks that other

conditions may have a higher priority.

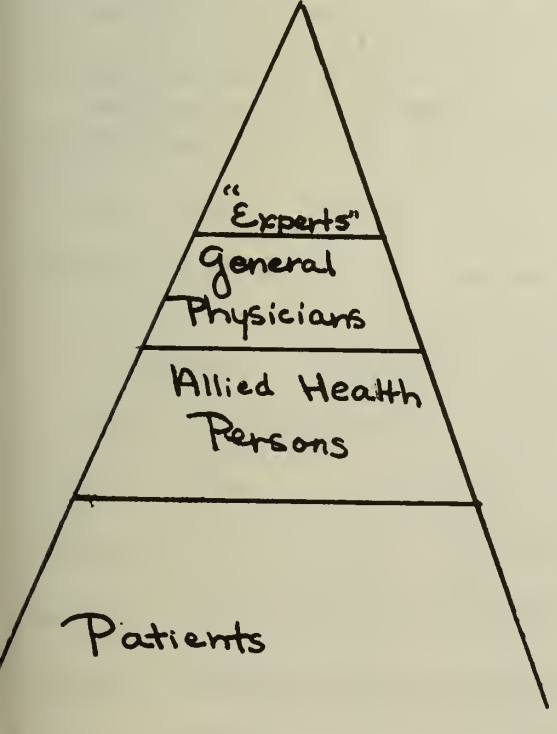
This does little for the patient except that as physicians we often repair fenders instead of rebuilding cars, or better yet preventing accidents.

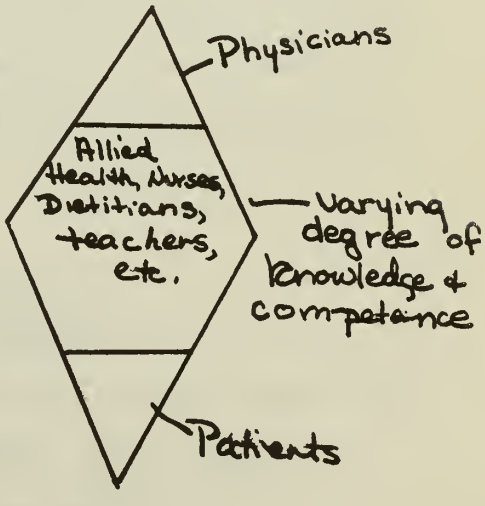
Whatever the reason, this is small comfort to the juvenile onset diabetic who has fears, and honest emotional problems, to the parent of the newly diabetic child, who is afraid to leave the child for even several hours, to the person crippled with frequent insulin reactions or bout of ketoacidosis, or to persons hospitalized for long periods with foot lesions, many of which were preventable.

The job at present is not being done.

Education Levels

In theory education proceeds in this fashion (fig.1)





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In trying to teach patients we have found it is first necessary to teach the teachers, and quite often the physicians first.

Organization as a Springboard

Nothing, not even education, can be achieved without an organizational springboard, or launching pad from which to operate.

I can stand on the street corner and shout, but without organizational support, I will be like the proverbial "Voice in the Wilderness". For this reason I joined the Joslin Clinic and Foundation some 20 plus years ago, and more recently, accepted certain responsibilities with the American Diabetes Association. I now spend about 2/3, not of my working hours, but of my life devoted to trying to help the diabetic not only live better, but to live, through education.

We have been involved at all levels as one example - The Joslin Diabetes Foundation, Harvard Medical School and the local universities have been instrumental in the training and teaching of more than 5,000 Latin-American physicians in the last 5 years (Table 1)

SUMMARY: JOSLIN-HARVARD COURSES IN COOPERATION WITH LOCAL UNIVERSITIES

Course	Year	Site	Population of Country	Practicing Physicians	Physicians at Course
I	1971	Buenos Aires	25,000,000	16,000	750
II	1972	Mexico City	55,000,000	10,000	2,100
III	1973	Rio de Janeiro	90,000,000	9,000	860
IV	1974	Caracas	10,000,000	5,000	760
V	1975	Puerto Rico	3,500,000	4,000	600+ *

* estimated

We have organized courses involving many thousands of nurses, dietitians, nurses aides, pharmacists and others.

The greatest need, however, is that of the patient who not only has problems in living effectively, but does not know to whom to turn to get questions answered. These are the persons to whom the American Diabetes Association and other organizations and institutions are, and must increasingly address themselves.

Means of Reaching the Patient

a) PAST In the past education was done in the old classical Chautauqua lecture method. It is successful in an expensive way to help relatively few patients in a few institutions. There were (and are) manuals and other more-or-less cookbook approaches to patient education. Unfortunately these are not available to the great masses who not only do not know what is available but also do not know what they do not know! By and large, with few exceptions, these are geared to the motivated, Anglo-Saxon oriented, high school level educated person. Diabetes does not confine itself to ethnic, education, economic or psychological boundaries.

b) PRESENT In addition to the above, a wide spread publication such as the American Diabetes Association's FORECAST, is the best means of educating diabetics at this time. With a circulation of 100,000 each issue, it is estimated that a quarter of a million people read it each two months. The loyalty of the reader is fanatical. However, it still requires widespread changes (in progress) larger size in pages and a much greater circulation. A circulation of 100,000 is puny. It should be 2 to 3 times that at least. Radical changes have been made and this has only been a start. Eventually, it should be a monthly of such viability and interest and such literary excellence

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that non-diabetics will try to get their hands on it!

c) FUTURE Modern methods will have to be used. These include regional forums for diabetics, tape casettes for instruction, audio-visual materials available to doctors offices and small clinics, and in the future video instruction for patients on their own T.V.'s at home.

Cost of Non-Education

In addition to previously cited reasons for education there is another reason. The patient, the hospitals and the country cannot afford the crippling and expense of non-education.

This is only one example of possible savings. At the New England Deaconess Hospital during one recent year (table 2) the cost of hospitalization alone (without physician charges) was $1,000,000.

TABLE 2

THE HIGH COST OF FOOTCARE

In this day of focus on hospital expenses, a day saved, where possible, is important. The high cost of foot lesions are shown here:

THE HIGH COST OF FOOT LESIONS

New England Deaconess Hospital
Diabetic Foot Admission--1969

CONDITION	NO. CASES	PATIENT DAYS
Gangrene	142	4,719
Infection	32	724
Ulcer	159	3,391
Charcot's	6	64
Abscesses; Cellulitis	33	580
Osteomyelitis	45	1,264
	417	10,742

Total Hospital Admissions 10,321 (including diabetes)
These used total patient days 119,870
while
417 diabetic foot cases used 10,742 patient days
Average total cost per hospital day $101.08
Therefore: More than $1,000,000. yearly is the hospital cost (not including medical fees) for care of patients with severe foot lesions and complications in this one hospital alone!

Further surveys have shown that about 1/3 of these were preventable, another 1.3 might have been preventable or at least delayed, if patients and their physicians had been aware or if good preventive methods had been used.

The patient cannot afford this!

The medical profession cannot allow this!

The United States cannot tolerate this!

The tools of ignorance are expensive. Every diabetic must be a paramedic. Jose Marti (Cuba 1898) once said "It is better to build a fence around a cliff than a hospital under it!"

Leo P. Krall, M.D.

Director, Education Division, Joslin Diabetes Foundation -- Editor-In-Chief. ADA DIABETES FORECAST, Lecturer in Medicine, Harvard Medical School.

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Testimony Presented to the
National Commission on Diabetes
by: Mr. Maurice Hertzfeld

May 1, 1975

By: Maurice Hertzfeld
Member National Board of Directors
Vice President for Fund Raising Juvenile
Diabetes Foundation

Dr. Crofford, members of the Commission and my friends of the concerned public, the National Diabetes Mellitus Research and Education Act, under which this Commission has been given the awesome responsibility for setting the direction of our Federal government's plans, programs and budgetary allocations for years and, perhaps, even for generations to come, represents legislation initiated by and passed for the needs and the benefit of the millions of diabetics and their families throughout this Nation. Thus, it is our legislation--not this Commission's, not the National Institutes of Health's, not any specific institution's or any group of special interest research, treatment, training or education centers, but ours--the people by whom and for whom it came into being. And our purpose in coming here today as well as in having our counterparts from all areas of the country appear before you or watch the progress of your deliberations, during sessions at which we have no direct input, it's to help assure that the purpose and intent of this Act, as moulded by you who were appointed as our emissaries, does indeed, in its final form, reflect priorities and budgetary allocations as we see them. We are not questioning the ability, the knowledge, the integrity, the special areas of expertise or the sincerity of any member of this Commission.

The Act itself very specifically designates what its makeup should be and it spells out the responsibilities with which you are charged. We accept that. But we also understand that each individual views any problem from his or her own perspective and consciously or unconsciously is also influenced by special or vested interests. And in this case, the only vested interest that can ultimately prevail is that of the diabetic, the potential diabetic and their families. Through as many years to come, until the cure is found, we are the people for whom you are, in essence, working during these nine months. And the report you ultimately give birth to must be made in our image.

My own interest in this problem and my active involvement with the Juvenile Diabetes Foundation, as a founder and member of its National Board of Directors, stems from the very personal concern for my own diabetic child. But my input to both the Foundation and to all other applicable individuals and groups, including this Commission, is from the perspective of a business man who has successfully and proudly built and maintained even through these

adverse economic times, a growing real estate and development company including the development of the University City Science Center in Phila.

The preparation, the principles, the market research and the hard work on which my success was established are indigenous to the growth of all thriving commercial enterprises in America, as well as to non-profit organizations and to successful government operations. And, hopefully, it is with that objectivity that the following observations and recommendations are being made.

Initially, inasmuch as you are spending these few days in Philadelphia to consider the scope and impact of diabetes, let me address myself to that very limited but vitally important area of knowledge. Permit me the understatement in saying that we already know it is a major National health problem. And that parallels the recognition by a businessman of a commercial problem or widespread product need, for which a viable solution will bring him a good return. The true extent of that need and preparing to fill it expeditiously, profitably and meaningfully for its target audience, is the next logical step. We call it market research--in the field of medical science you might more realistically call the same approach an epidemiological study. Whatever the designation, it is essential that this Commission does, indeed, set in motion the machinery which will ultimately determine the true scope and impact of diabetes.

We already accept the fact that diabetes is the leading cause of new cases of blindness in America as well as the fifth leading cause of death by disease. We throw out the figure, without contradiction, that diabetes affects 5% of our population. But that horrendous fact, already encompassing some ten million persons, is probably a rock bottom number. In my view we have already surpassed the epidemic level and surely qualify for a huge allocation of federal disaster funds. There's no need to dwell on the unscientific, but moving evidence, that flows through the National office and the local chapters of the Juvenile Diabetes Foundation in heavy bags of mail, each week, asking for advice or information. We have long been convinced that the magnitude of the diabetes problem is vast. But we need a valid and thorough method of reporting and record keeping to assess the true scope and to act responsibly on it. That responsibility must be an integral part of your final recommendations to our government. Diabetes has to quickly be made a reportable disease by the Congress. The endless numbers of deaths attributed to all other causes, which are in truth merely manifestations of the diabetes syndrome, must be properly categorized with diabetes recognized as a secondary cause of death, only then can we begin to put the problem in its true perspective. The techniques for getting that information are already available and widely operative in other disease categories and I urge you to strongly recommend the immediate implementation of a similar approach as a program and budgetary priority.

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Beyond that appeal for consideration and action by your Committee on Scope and Impact of Diabetes, the overriding concern that will be an integral appeal of every diabetic and parent who appears before you, is for emphasis on the research which will ultimately determine the cause and find the cure for diabetes, not major capital expenditures for additional bricks and mortar. Not one of us underestimates the importance of better treatment, better training, better education or better understanding of this multi-faceted problem in any area of its devestation. We simply believe that research into or money in any significant amounts contributed to these other areas is not the primary purpose or responsibility of this historic legislation. I cannot help wondering, not cynically, but realistically, if a physician whose specialty is treatment, training, education, -- or any combination of those essential medical disciplines, is deeply concerned with or oriented toward basic scientific research aimed at learning the cause and finding a cure for any given disease. Forgive the cliche, but they too are human and, therefore, are motivated by and primarily concerned with their respective areas of specialization. Their financial success and their recognition in the community and amongst their peers, comes from the numbers of patients they treat, the size of the departments or institutions they work in or direct, and their reputations are earned within that milieu. Surely, it's understandable that as an automobile manufacturer is less concerned about air pollution than an environmentalist, so a practicing or teaching physician is less concerned about "cure" in the area of his specialty than is a scientist engaged in basic research in the same field. That researchers ultimate goal and his recognition, which we all seek, will come through a discovery that marks a significant scientific breakthrough in his given field. And I doubt that there's one alive who doesn't sometime dream of being awarded the nobel prize. It is that man's dream, working in diabetes research, that we want most to help fulfill. And going back to my original statement about this diabetes Act belonging to us, it becomes your responsibility to shape your recommendations and priorities in our best interests as we see them, otherwise all of our testimony and all of the time and money encompassed by the Act, will have been just another charade for the benefit of a handful of individuals representing special and limited interests. We do not intend to allow that result, and, in conclusion, on behalf of the many thousands of parents of diabetic children, I'd like to share a personal dream. A dream that one day children will be told, "like polio, there once was a disease called diabetes." With your help, that dream may become a reality.

Thank you.

Testimony Presented to the
National Commission on Diabetes
by: Ms. Joan Sherin

Ladies, Gentlemen. . . .The members of the Juvenile Diabetes Foundation are honored to be here today. We are certainly very encouraged by the existence of the Diabetes Commission. I am the president of the Philadelphia chapter of the Juvenile Diabetes Foundation which has a membership of over 500 families. With this many members we get calls from an extensive cross section of people and have noticed a pattern of definite trends. When we are called by the parent of a new Diabetic, we have found that in a short period of time we get calls from other newly diagnosed cases, all in the same geographic area. We have seen three boys in the same bunk at camp become Diabetic. In one family with nine children, four are Diabetic and two of these became Diabetic within a matter of weeks.

The theory that Juvenile Diabetes may be caused by a virus causes us deep concern. There was just a recent article in Newsweek connecting the mumps virus to Diabetes. It was found that four years after the mumps were contracted, the child became a Diabetic. I could very easily identify with this because my son became a Diabetic four years after he had the mumps, which tends to substantiate their findings.

We feel that it is imperative that this type of research be funded and continued on an accelerated program.

My son Steven has been a Diabetic for eight years and is 13 years old. We were always told that if you have to get a disease, Diabetes is the best one to get. If you take your insulin and watch your diet you can live to a ripe old age. As I sat in Washington at the Diabetes hearings and listened to all the testimony given by prominent physicians, I found that all of the things I had been told about Diabetes were completely untrue.

I have spoken to young adults who are blind from Diabetes. They suffer from kidney problems, neuropathy problems and depression sometimes too deep to shake. They have lost their employment and independence, as well as their health. This winter I cried with the mother of an eighteen year old girl who had just died from Diabetes. She had a heart attack. An autopsy was performed on her and the parents were told that her arteries were like those of an 85 year old woman, and yet she had only been Diabetic four years.

I have spoken to far too many parents about children who had been misdiagnosed. The Diabetes was not diagnosed until the child was in a coma, even though the mother had taken the child to the physician for an illness. We continue to hear of cases where children die in coma.

A stronger education program must be instituted not only for the public, but for the medical profession and health care institutions as well. Our large teaching institutions may be doing a good job, but can the health of Diabetic children living in small towns be left to flounder? We think not. Strong programs must be set up, and they must be done now.

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Time is running out. Our children who have Diabetes must be given a chance for a better future. These children are dependent on an alcohol swab, a syringe and a bottle of insulin for life. Every illness or surgical procedure becomes a major problem. Ordinary life situations, such as adolescence, dating, driving and marriage are emotionally complicated for them. We have not come very far in the 52 years since the discovery of insulin. New methods of treatment must be found to stem the tide of complications.

The Diabetic cannot wait. Now that the Diabetes Commission has been formed, we look to you for help in getting research stepped up so that we may soon find the cause and possible cure for Diabetes.

Testimony Presented to the
National Commission on Diabetes
by: Dr. Theodore Duncan

PROPOSED HEALTH CARE DELIVERY FOR DIABETICS IN THE COMMONWEALTH OF PENNSYLVANIA

Introduction

Diabetes, a life-long disease afflicting both children and adults, increases medical problems for the patients and inflicts an economic burden upon industry and society. The number of diabetics increases 10 percent each year--300,000 are listed in our Commonwealth. Two million four hundred thousand (20 percent of the population) either have diabetes or are carriers of the diabetic gene. Diabetes, primarily a genetic disease, is transmitted from generation to generation at an increasing rate that attacks the very heart of the existance of humanity.

More patients are subjected to the complications and decreased life span. Although insulin has permitted the juvenile diabetic to maintain life, many live to develop the dreaded complications of blindness, gangrene, kidney disease, vascular deficiency, recurrent infection, and some of the associated diseases--coronary heart disease and hypertension. Diabetes is the leading cause of blindness between the age of 40 and 60. Blindness develops in more than 300 patients each year due to diabetes in the Philadelphia area. Although, because of its name, juvenile diabetes is thought to afflict mostly those in the younger age group, over 90 percent of the patients so afflicted are adults or elderly. Fifth-seven percent of the

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diabetics that die in Pennsylvania were 70 years of age or older. The percentage of complications increases as the duration of diabetes and older patients have more complications.

Diabetes creates a tremendous economic burden on the patient and society. The estimated cost of this disease in Pennsylvania (1970) was $165,370,000.

The estimated cost of medical services and supplies annually totalled $45,620,000. This includes costs of hospitalization, tests, drugs, and equipment, physician's fees, and nursing home resident fees.

The evaluation and treatment of diabetics currently varies from excellent to very poor. Lower economic groups tend to be treated in clinics and medical wards of metropolitan hospitals or not at all but the affluent will seek medical service from private physicians. No recognized standard of care exists and an adequate data accumulating system is all but non-existant. Education for the diabetic is directly related to personal motivation of a physician or nurse and most of the time is less than adequate.

Standards and methods for provision of care must be established to ensure adequate treatment and care of the diabetic patient regardless of his socio-economic background.

Methods and standards for treatment, education, administration, and data collection are essential in any system that is to improve care and to evaluate utilization.

II. Treatment

The person seeking medical care invariably, when given a choice, will select a private physician to care for his medical needs. Therefore, a proposed method for medical care should be intermeshed within the existing system since it is the patient's choice and the most economical.

Private practicing physicians certified for the care of this disease will provide the first eschelon and routine care for patients having diabetes. In addition at least two Diabetes Comprehensive Care Institutes (DCCI) should be established to provide specialty care, education, and detection for diabetes and its complications.

The Diabetes Comprehensive Care Institute (DCCI) will plan and administer methods for education and treatment throughout the system in Pennsylvania. One of the DCCI will be selected as the administrative center of the system and will provide standards for provision of care, review of utilization, maintaining records and providing education.

A. SERVICES PROVIDED BY THE DIABETES COMPREHENSIVE CARE INSTITUTES

1. Screening Programs

Although the true worth of the yearly screening program has been questioned, it has been beneficial in some cases in detecting early diabetes. Methods used for this procedure vary, some more adequate than others. Definite

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standards for detecting procedures must be established and used uniformly throughout Pennsylvania. A continuing daily program is suggested not one limited to one week per year.

Each diabetic should without fail participate in a yearly evaluation to detect the early onset of small or large vessel disease--retinopathy, nephropathy, or the onset of neuropathy. In addition the appropriate evaluation should be done to detect the insideous signs of associated diseases such as arteriosclerotic heart disease.

2. Treatment

The personnel of the DCCI will provide primary care for patients who reside within their community, but the major portion of primary care will be provided by private physicians throughout the Commonwealth.

Periodic evaluation, a most essential part of care, and should be done on a yearly basis to detect the degree of control and those difficulties that might have arisen in the past year. Experts will be employed for this service. A foot evaluation by a podiatrist is mandatory to provide current therapy to prevent future amputations.

DCCI will provide on-going treatment and for the complications of diabetes and will use the newest and most effective methods of therapy for renal disease, impaired

vision, neurologic difficulties, other complications, and associated diseases.

The staff required to perform these functions should include specialists with indepth knowledge of the management of the patient with diabetes and a group of experts including renologist, cardiologist, ophthalmologist (retinologist), and neurologist to provide continued evaluation and care for the patient.

DCCI should educate and use more para-medical personnel and nurse practitioners since at least 80 percent of the routine work can be done by this well-motivated group of para-medical persons.

Inpatient Care should be provided within the DCCI for patients having newly discovered diabetes, those with extremely poor control or those having complications needing this type of facility. In addition to therapy, an on-going daily, recycling education program is essential to help the patient know as much about his diabetes as possible. Through knowledge better control may be maintained, symptoms, time away from work and hospitalizations are decreased. A major effort will be made to treat the patient at home and to admit only when necessary to provide services that cannot be given in the home.

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Mobile Home Care Team will employ nurse practitioners, visiting nurses, para-medical personnel and possibly a physician to re-enforce and evaluate treatment and care instituted by the private practicing physician and the DCCI. The socio-economic status of each patient will be evaluated to ensure that the best care is being provided and when necessary additional support will be given to help the patient in the lower economic groups. This team will act much like a physician that makes "house calls" but also will provide the additional services of nurses and social service workers. Most problems can be treated at home. If done promptly then the difficulty may not develop into major complications that require hospitalization--thus helping the dollar for diabetes perform greater services.

The Diabetes Hotline will provide immediate telephone communication for all patients within our Commonwealth--24 hours a day, 7 days a week--to give medical help from a qualified person. If possible the problems will be solved and treated at home, but when indicated the patient will be admitted to a hospital for further evaluation and care. If necessary, the mobile home care team could be used to provide further additional support at the patient's home. This service will not interrupt the private patient-private doctor relationship since it will provide

information for the patient when the doctor is not available. In addition the private physician may refer his patients to this service when he is not available for calls.

Primary Care for the patient will be provided by practicing physicians in the community who have elected to obtain further training in diabetes and become certified for participation with the DCCI. The physician must be willing to receive special training, maintain the standards of health care initiated by the organization, maintain the required records, provide data on an on-going basis to his local DCCI and to send the patient one time yearly to the DCCI for screening for complications.

A list of certified physicians will be maintained throughout the state and will be made available for those requesting this specialty type of service.

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III. Education

Diabetes has no cure. Once the physician establishes the diagnosis and determines the treatment needed, the diabetic must carry out the day-to-day management of his disease. Training is an integral part of treatment since the patient does assume some of the responsibilities of his physician. He must have a clear, decisive knowledge about many facets of his disease--notably, the measuring and self-administration of insulin, the effects of insulin upon the blood sugar, heredity, low blood sugar reactions, diabetic coma, testing the urine for sugar, motor vehicle operation, employment policies, adjustment of therapy necessary for traveling, insurance, pregnancy and diet. If the knowledge gained by the patient is used for self-care, life expectancy is increased, complications are decreased, hospitalizations are decreased and the majority of diabetics can fulfill most of their goals in life. The security gained through knowledge replaces the dread that accompanies ignorance.

Few hospitals or physicians are equipped or have sufficient time to adequately teach patients with diabetes about their disease. Each person has his own problems and requires formal and informal training. There is a need for a professional group of physicians, nurses, dietitians, and allied health personnel to provide high level teaching about the treatment and care of diabetes. Teaching is an integral part of treatment and through education control of diabetes is improved. This program not only provides a means of treatment and teaching but also provides a practical form of <u>preventive medicine</u>.

Several regional diabetic teaching and treatment centers (DCCI) should be established in the Commonwealth of Pennsylvania to train the patient about his disease. There also should be concurrent training programs for physicians, nurse practitioners, and allied health personnel. Approximately 60 percent of the physician's routine work can be delegated to allied health personnel to expand and improve care for a greater number of diabetics. In addition to these courses others should be provided for the internist and general practitioner and other interested physicians to acquaint them with the management problems and treatment of diabetes. Upon completion of this course the physician would be certified to provide care within the system. This would ensure a basic training program for all physicians and other personnel participating in the total care of the diabetics in the Commonwealth.

In addition to patient and physician training programs an active system should be established to reach every member of the community outlining the problems of diabetes One method that has been established and is quite successful is the Dial-A-Message for Diabetes now functioning in Philadelphia. This service provides specific information about certain facets of diabetes. For example, Pregnancy and Diabetes, Warning Signs of Diabetes, and Diet and Diabetes. Diabetes is a community problem and as time progresses it will become more so since the number of cases of diabetes is increasing markedly each year. Members of the news media are woefully uninformed about this disease. Currently most believe if properly treated the diabetic can lead a good and full life. He is unaware of the potential dangers to our society and to the individual.

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IV. Data Collection

Each diabetic admitted to a hospital or outpatient treatment facility affiliated with the diabetes program should have a medical record (see addendum #1) completed so all data concerning the patient's diabetes may be permanently recorded and retrieved for analysis. These records would be confidential and would be subject to the same restrictions as current hospital records. Each patient and hospital would receive a code number so that data sheets might be easily identified. The medical record sheet should be simple enough for a trained allied health person to question a diabetic to glean the information and record it without difficulty. This sheet should include the history, physical examination, and laboratory data not only for the initial visit but also a shortened form would be used for each repeat visit. This data sheet should be easy enough to use so that the physician, nurse, or allied health personnel would instinctively rather record data on this sheet than "write it out" in long hand. The record sheet would include such basic information as the patient's age, onset of diabetes, type of diabetes, complications, associated diseases, history, physical examination, laboratory data and socio-economic factors such as length of hospital stay, days away from work, financial losses, financial costs, degree of disability, medical insurance coverage, amount of life insurance held, etc.

At weekly or monthly intervals a copy of the record would be sent to the DCCI for review to determine if standards are being observed,

and if not, proper steps should be taken to strengthen the areas of weakness. Data submitted should provide sufficient information to determine if there has been over-utilization or under-utilization of patient treatment and whether the proper medical consultations have been sought to review the patient's particular complication.

> For example, when the patient's record shows that diabetic retinopathy exists with serious complications, certain consultations and studies are indicated. If these have not been done, certainly there has been under-utilization of the system. The patient should have received a consultation with an ophthalmologist who has specific training in evaluating the eyes of the patient with diabetes and associated retinal problems. In addition certain studies such as Fluorescein dye study should be done to further delineate the problems and if necessary, laser therapy should be instituted to slow down the complications of diabetic retinopathy. If the records do not show that these steps have been done, under-utilization exists and the required pertinent and very necessary evaluation and treatment has not been used to achieve maximum benefits for the patient. Therefore, a physician from DCCI would contact the practicing physician to show where further help can be given to the patient. This

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Procedure will ensure a standard of medical care for the diabetic that would be consistent throughout the Commonwealth.

Yearly the stored information should be compiled, interpreted, and sent in a booklet or manual to all the centers and units within the Commonwealth and to other interested personnel.

V. Conclusions

The proposed system does provide an organization for the treatment and education of patients, physicians, and para-medical personnel. It will establish standards and form a quality control system that will ensure continuing excellent medical care. The data recording collecting system will help gather new information about this disease and ensure the existing methods are being used for the maximum benefit for the patient.

VI. Recommendations

We request that this proposal for provision of medical care for diabetics be submitted and reviewed by the newly created Pennsylvania Diabetes Institute and after consideration a task force be established and instructed to, within a period of three months, establish and submit an operational plan with a proposed budget for provision of medical care and education for the diabetic in our Commonwealth. Sufficient funds should be provided to the task force for salaries and consultants.

Testimony Presented to the
National Commission on Diabetes
by: Mr. Robert Selig

Contrary to the belief held by most people, insulin is not a cure for Diabetes! At most, it is merely a means of control of one of the problems created by this disease process. But what do we mean by control? If we assume that a diabetic is under proper control, would it then follow that he should be able to lead a normal and productive life? The answer is not that simple, because it would be short-sighted to conclude that because a diabetic's blood sugar is kept within reasonable limits, he is therefore under control with his many problems solved!

Let's face it, control is not all that it is cracked up to be! Even with what we call good control, the diabetic experiences daily numerous fluctuations in his blood sugars reaching symptomatic hyperglycemic and hypoglycemic states. Every physcian realizes the difficulty in regulating in a hospital setting what is accepted as a reasonable blood sugar. It therefore follows that home control is much less effective because of the varying activities of the diabetic.

As a result of my medical training, my own experiences of being a diabetic for many years, and a great deal of understanding from my parents, I have been able to maintain myself in proper control. Nevertheless, because I am unable to anticipate my varying activities each day, I find myself subjected to many episodes of hyperglycemia and hypoglycemia. The innumerable emotional and psychological problems that result from these episodes instill within me an ever existent gripping fear of what could happen at any time. It should be noted that these episodes of hyperglycemia and hypoglycemia often result in disablement leading to the extremes of diabetic coma and shock respectively. To a reasonable extent, I have learned how to adjust to these problems so as to lessen their effect upon me.

But we must give some thought to those many diabetics who do not have any such training and will never reach any level of understanding of the disease they are afflicted with. Perhaps I can best convey to you what I am trying to say by comparing this situation with that of a person who has just experienced their second heart attack. They live daily with a fear of a reoccurrence! Can you possibly imagine the fears that such individuals and their family experience when they are unable to recognize the signs and symptoms of hyperglycemia and hypoglycemia!! There are just no words to express the fears of that individual who is going into shock, but does not know what is happening to him!!

I wish to discuss another problem that the well-controlled diabetic is confronted with. There is an ever increasing amount of research that has shown some evidence that this disease process has produced both acute and chronic destruction to various organ systems in the body. This information has made me fearful of the destructive changes that might be occurring within my own body. Should I be concerned with an early failure in my kidney functions? Should I worry about a premature heart attack? Or how much weight should I give to the fact that diabetes is one of the leading causes of blindness?

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These thoughts pass through my mind everyday of my life!!

From what I have tried to explain and from my personal experience, it should be apparent that control of diabetes falls far short of what is needed. We must aim through considerably more research to achieve a cure so that individuals afflicted with this disease will be able to lead a life free of those many problems the diabetic today must face!

It is going to take time to achieve the goal of a complete cure. For the immediate present, we have the problem of teaching the diabetic how to understand and cope with his disease process. Being a diabetic is not easy! Even when the diabetic himself understands the disease, it is very difficult to accept it. I was strongly advised not to apply to Medical School because my diabetic condition would be an important factor in not being accepted. This upset me quite abit and it took me time to overcome the fear that my disease would prevent me from fulfilling what I was determined to do with my future. Consider the obstacles that a diabetic encounters when he applies for life insurance or in applying for almost any type of work!

The problem takes on greater significance because statistics show the number of diagnosed diabetics to be increasing at an alarming rate! I can not overemphasize the importance of the education of the diabetic and his family. Too many diabetics are suffering because they do not really understand their disease as well as they must!

Let me discuss briefly a personal experience that best illustrates this point. I became involved with a twelve year old diabetic. He had been diabetic for a period of six years. I was completely shocked when I discovered that he knew absolutely nothing about his disease. I was even more shocked when I learned that his family was equally unaware of what diabetes meant. They knew that he needed insulin, but they did not understand any of the elementary concepts of insulin, exercise, stress, eating habits, and infection. On more than one occassion they gave him the wrong insulin and put him into shock! His inability over the last six years to understand his disease has led to his inability to cope with it. The result has been disasterous, in that this young boy is unable to function in school and in fact has been expelled from the school.

The Juvenile Diabetes Foundation (JDF) has been aware of this family's problems and through our organization's efforts in educating this family about diabetes, there has been a startling change in the family's outlook. For the first time in many years, they have been able to function as a family unit and the young boy is learning with our continuing help, to understand and cope with his disease and its accompanying problems.

Seeing the tremendous accomplishments of JDF in this one individual case, makes me feel very strongly that a federally funded national program of

educational and treatment centers and research be established. JDF, a national organization devoted solely to the goal of increasing research and education toward the cure of diabetes, has done a great job. These educational treatment and research centers are needed to supplement the efforts of JDF. Newly diagnosed diabetics need desperately a place where they can go to learn and understand what this disease is all about. They need a place where someone will listen to their problems relating to the disease and help lessen for them the shock of learning that they or a member of their family is a diabetic. The physician in his normal daily practice is not in a position and can not be expected to fulfill this important function to the degree that is necessary!

There is another important aspect that the ducational program must include. This relates, in the case of the young juvenile diabetic, to the school personnel. It is of extreme importance that the teacher and nurses of the school systems be educated to the extent that they are able to recognize and understand and deal with the problems of the young diabetic.

The goal of achieving a cure for diabetes is not unattainable because of the lack of directions to pursue, but rather one of insufficient funding to adequately support the research projects.

If we ever expect to cure this disease, we must truly understand and agree that insulin is but a stop gap and that control as we understand it is merely a form of sustaining life, but does not reach the heart of the real problem!

The present funding for research is totally inadequate. JDF stands alone in the field in attempting to fill the gap left by this inadequate funding. No private organization can be expected to carry so large a burden that is afflicting so large a portion of our population in the increasing numbers.

We as present or future physicians must agree among ourselves that the present system of educating our newly diagnosed diabetics as well as the general population, is grossly inadequate. If we can accept this, then it is our responsibility as physicians to remedy this dilemma.

What I have tried to express is the fact that we must find a cure for diabetes, but at the same time while this is being undertaken, we must work out a large scale program to deal with our present diabetics.

Speaking from the point of view of a diabetic, it ishard to accept the realization that so little has been done up to now to discover a cure for diabetes, many other diseases have more than adequate funding by the federal government, but why not diabetes? Who is it up to, to decide when diabetes is important enough to pour resources into for research? The Diabetic Commission has been set up as an answer to such a question. So, ladies and

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gentlemen of the Diabetes Commission, I leave in your hands the futures of all diabetics, including myself. Next year, I will be a doctor - I know that I have much to give our society in years to come. I sincerely hope that you will help me work toward that goal, and the goal that all diabetics and their family have placed as their number one priority A CURE OF DIABETES.

Testimony Presented to the
National Commission on Diabetes
by: Mr. Joseph Solowiejczyk

Mr. Chairman and distinguish members of the Commission.

Thank you for giving me the opportunity to speak with you today.

My name is Joseph Solowiejczk. I am 22 years old, an undergraduate student at the University of Pennsylvania and have had diabetes for 15 years. For the past 6 summers, and the last 2 winters, I have worked at the Elliot P. Joslin camp for diabetic boys, in Charlton, Massachusetts. At the present time, I am heading a rap (discussion) group for adolescent diabetics, living in the surrounding area, in cooperation and with the help of Doctor Baker (head of the C.R.C. at Children's Hospital).

As a result of my own personal experiences, and through my interaction with the adolescent diabetics. I believe that there is a great need for financial grants from the Federal Government in the area of counseling, as it applies to adolescent diabetics. This would imply (1) substantial and continuous financial support for the many diabetic camps which operate across the country; (2) Federal support to hospitals, which are capable of treating adolescent diabetics, for the hiring and maintaing of qualified especially diabetic-cverated psychologist counselors, and nurses. And (3) that funds be made available to regional Social Welfare Boards in designated low-income areas across the country, that would provide for a training program aimed at educating social workers in the psychological aspects of an adolescent and juvenile diabetic and his/her relation to the family unit.

This last proposal implies that studies be done, with Federal Grant backing, at universities in this country, concerning the psychological implications and aspects involved in being a juvenile diabetic. With all the due concern and attention being paid to research for a cure, there are still thousands of us alive today, who must on a daily basis, contend with the disease. That a cure is in sight, is not doubted, however it will be sometime before that cure becomes a reality. Having worked in a diabetic camp with many problems and non-problem adolescents, pyschologically and socially speaking, I have been able to see what a minimal degree of understanding can accomplish, in terms of making kids come to grips with their conditions and sending them home, being able to face reality with a greater degree of confidence in themselves. I know as a result of my own experiences, that the adolescent diabetic is a special and particular case, and the fact that his/her psychological stability affects his/her physicial well being to such a great degree in itself warrants a closer look at the psychology involved.

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What I am suggesting is that the Committee recommend legislation that would effect immediate and beneficial results to a large group of people; people who are literally this country's future.

The effort directed towards a drive for greater efficiency in control on a national basis, are inseparable from the one directed towards the desire to see more money being pumped into the research for a cure drive. One particular disturbing fact, for myself and presume for the thousands of other diabetics across the country, is the increase in clinically reported "diabetic" complications, such as those that fail under the name of DIABETIC NEUROPHATHIES. The fact that more insulin dependent diabetics are living longer as a result of more precise and scientific methods of control, means that one is better able to see the very serious nature of what it means to have diabetes over a long period of time. This new perspective is achieved by realizing the number of complications, the wearing away of nerve endings as a result of unstable blood sugar, and possible damage to the eye, to mention two, which young diabetics have to look forward to. Facts like each year, approximately 325,000 Americans discover that they have diabetes or 1 million new diabetics every 3 years. Diabetes is seen as lessening the chance of successful pregnancies, increasing the frequency of birth defects; that diabeties may lead to foot ulcers, muscle weakness and abnormal functions of internal organs, in addtion to the most common complication of hardening of the arteries, resulting in subsequent heart attack, stroke, or gangrene must point out to the most casual observer, the seriousness and urgency of the situation. Control, education and research all have one essential factor in common: in order to progress and prove beneficial they must be funded on a larger scale than what is being done at the present time.

Thank you.

Testimony Presented to the
National Commission on Diabetes
by: Mr. David Landis

Dear Members of the Commission;

I wish to thank you for the opportunity to address the commission.

I am 29 years old and have been a diabetic for over 22 years. I have two brothers who are also diabetic. I must admit that as a youth my diabetes was not a handicap to me but rather a handicap to my parents. They are the ones who had to make all of the special arrangements for vacations etc. Because of this extra attention needed by a juvenile diabetic by his parents, I do feel that education of the parents is vitally necessary to insure that a child is given utmost care. Since it is not possible for any physician to spend all of his time with his patients. it becomes the parents responsibility to educate the juvenile diabetic in management of the disease. This again makes it important that the parents be given as much information as possible to aid the child.

Just as important as therpy and treatment of diabetes is important, it is also important to fund research for either the cure of diabetes or better possible treatment of the diabetic. For much too long we have assumed that we are treating diabetes properly and yet the complications of diabetes are inflicting young diabetics with blindness, and various other more fatal problems. There is some point at which a financial balance for both research and treatment or therapy as well as public information must be found.

Because of my particular situation of blindness caused by diabetic retinopathy I should like to share with you some of the handicap which I now experience and yet for so many years did not.

As we all know; a diabetic must maintain a balance of diet, insulin and exercise. As a blind diabetic I should ask you to imagine the difficulty in both calculating and preparing a good diet. I should also ask you to imagine how difficult it is to prepare an injetion of insulin when you cannot see the needle to assure the proper amount of insulin. The nature of diabetic retinopathy forbids most all forms of exercise since additional hemorrages could occur and create more serious loss of sight. Finally thanks to scienxe a normal diabetic is able to see if he or she is under control by testing their urine. This is allmost a necessity but have you stopped to realize that this test relies on the visual comparison of color to determine control. Obviously this test is worthless tb the diabetic who like myself lives alone.

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Finally may I explain that if a diabetic does become blinded by diabetic retinopathy there is no existing system to successfully council or provide assistance for vocational rehabilitation. There is of course funds available for such a need but the system for distribution is much outdated. It seems that the system has for many years been built around the congenitally blind and is not prepared or in some instances even capable to perform for the diabetic who like myself looses his eyesight in the prime of both his working years andprofessional aptitude. I was most fortunate in that my profession can somewhat easily be adapted. Of course I must rely on public transportation to perform my sales position and certainly you can appreciate the limitations I shall have with respect to clientele but what does a young man or woman do if their vocation cannot be easily adapted. Since retinopathy is the largest cause of new blindness I feel that the existing system of blind services should be updated and made to reevaluate its responsibility to the blinded diabetic.

I am confident that in the wisdom of the commission you shall place the priorities in prospective so that the entire problem of diabetes can be dealt with effectively. I thank you for this opportunity to address the commision.

Sincerly

David T. Landis

Testimony Presented to the
National Commission on Diabetes
by: Mr. Myles H. Tanenbaum

Mr. Chairman and Members of the Commission:

I sincerely appreciate the opportunity to appear before you today and to share with you my thoughts with respect to mounting an effective program to combat the very serious health problem afflicting this nation in the form of diabetes mellitus.

My qualifications for appearing here to offer my views are as a parent of two children, each of whom developed diabetes at age 7, and also as an active layman involved in the affairs of the American Diabetes Association -- I have served as president of the Delaware Valley Affiliate and I am now serving as Chairman of the Board of Governors of that organization; I am on the Board of Directors of the national organization and I have been nominated for the position of Treasurer, in which capacity I will also serve on the A.D.A. Executive Committee; I have served on the A.D.A. Committees on Public Affairs, Functions and Structure, and Budget and Finance; and I have also testified before the House of Representatives Sub-Committee on Health and Environment in the course of its deliberations on the enactment of the law that provided for the Commission on which you are serving.

I do not intend to dwell upon the seriousness of diabetes since I am sure that each of you are fully aware of its dread consequences, and I am confident that other witnesses will more capably and vividly depict

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that problem for your edification. My purpose in appearing here is to share my observations with respect to dividing responsibility in handling the diabetes problem between the Government, on the one hand, and national and local health organizations, physicians and allied health personnel, and the diabetic and his family; on the other hand (all of which latter grouping will be referred to in the course of my remarks as the "Private Sector").

In my view the Government should be involved only with respect to those aspects of the problem that cannot be adequately and fully handled by the Private Sector -- but regretably, as I will develop in the course of my remarks, the Private Sector is capable of handling only a limited portion of the responsibility with the consequence that a major role must be the responsibility of Government. An effective program must involve four areas of concern: Patient Education, Professional Education, Public Education, and Research and Scientific Matters.

1. Patient Education - As you are aware, in the case of juvenile-onset diabetes, the patient will be insulin-dependent in order to survive, as is the case in many instances of adult-onset diabetes as well. In addition, in all cases of diabetes, diet is a most critical factor -- that is, a nutritionally balanced diet eaten in regular intervals upon a daily basis. In some cases of adult-onset diabetes oral therapeutic agents are sometimes used, but substantial questions have recently arisen in regard to their effectiveness and reliability. Of course,

basic hygienic safeguards are far more critical in the case of a diabetic. Lastly, and most importantly, is the patient's understanding of how and when to adjust insulin intake and diet, and how to administer anti-insulin shock or insulin-insufficiency measures on a periodic basis.

Patient education for a diabetic is of critical concern -- not only does it go to the essence of survival itself, but it has implications as well with respect to the patient's quality of life: blindness, renal and arterial complications, amputations and other serious complications are often the consequence of the patient being unable to properly care for himself. Among the reasons for poor care are the lack of competent medical attention (particularly outside of large metropolitan areas); lack of patient understanding in adjusting insulin dosage and diet as well as in handling reactions to excess or inadequate insulin (attributable to the patient either not having the capability of comprehending the intricate aspects of such adjustment or not having been properly instructed); and the very basic dilemma faced by the poor, namely, that a balanced diet is simply not part of their daily nutritional program.

The Private Sector can do a good deal of work in this respect as exemplified by the programs of the American Diabetes Association, for instance, relating to the preparation and distribution of a diabetic cookbook, public meetings at which problems of care and treatment are discussed with physicians and patients as speakers, and by its publications that are distributed periodically to over 100,000 diabetics. But what

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about the millions, and I should add the many unknown millions, who are not being reached by volunteer health organizations and other interested parties? The Government, as we know, can only do so much in providing for the poor, but when we consider that segment of the poor suffering from diabetes who require balanced diet, a redoubling of effort in regard to feeding that group must be undertaken. Perhaps the health care centers mandated in last year's legislation is the most effective way in which Government can fill the gap in regard to patient education. Surely if Goverment does not immediately set about to assist the less educated and the poor diabetic, as well as those living in more rural areas, so as to instruct them in the proper methods of care and treatment, death and other serious consequences to many countless individuals will follow. I warrant that the toll will be far greater than any that this nation has experienced in the Viet Nam war.

I also think it is relevant to mention that many of the affiliates of the A.D.A. operate camps at which youthful diabetics are instructed in the care and treatment of their ailment, and by reason of being engaged in intensive camper activity learn to identify their insulin reactions and promptly take steps on their own behalf to handle that very serious condition. For those who can afford to pay for the camp, a charge is made, but the camps take all applicants and regularly make appeals to the public and to private foundations for funds to cover capital costs and operating expenses. I see no need for government intervention in regard to this aspect of the program which A.D.A. handles

so well, at least in those areas of the country in which camps are in operation.

2. Professional Education - It is generally conceded that the medical and osteopathic schools do not provide adequate training in the care and treatment of diabetics. To overcome that educational gap, and it is to the credit of the physicians themselves, many doctors expose themselves to post-graduate courses such as those conducted by the American Diabetes Association on a national level and by the professional sections of many of the regional affiliates of A.D.A. In addition, A.D.A. publishes a Journal Diabetes (copies of which I have here to distribute to you) which is intended to further the education of physicians in regard to diabetes. But that magazine is devoted almost entirely to matters of research and it will not be until next year that the magazine will be enlarged by inclusion of 16 pages in each of its monthly editions that will be devoted to the clinician.

With respect to allied health personnel, the A.D.A. also devotes portions of its post-graduate course for their education, and the A.D.A. is now initiating with the American Medical Association rating programs with respect to the training given at hospitals and at medical schools in the care and treatment of diabetics. In the greater Philadelphia area, our organization engaged for a period of one year a qualified teaching nurse to work with various groups, including emergency wards of hospitals, in the instruction of the care and treatment of

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diabetics admitted to the hospital either suffering from a diabetes related problem or from some other health or accident situation that requires an understanding of the handling of that patient's diabetes. Lack of funds, as well as a policy decision to direct efforts in other areas for the time being, resulted in discontinuance of that much needed program. So today we find an intolerable lack of knowledge at the hospital emergency ward level, as well as in the general staffing of hospitals, in the treatment of diabetics; and police and fire emergency units, as well as volunteer ambulance services, are essentially untrained in the recognition of diabetic symptoms and in the care of diabetics under emergency circumstances. And if that is the case in a big city, picture if you will the risk taken by a diabetic who may find himself in a hospital for whatever reason in the course of travelling across this vast country.

Admittedly, the Private Sector can do a job in this area, but most yeoman effort will still leave major gaps in regard to providing knowledge with respect to the care and treatment of diabetics in the health delivery system of the United States. I suggest to you that a requirement for hospital certification in order to receive Medicare payments should be to provide an on-going program of education with respect to the care and treatment of such patients. I also suggest that physician licensing requirements by the states should include a knowledge of the care and treatment of diabetics. Health care centers should be established to provide training for allied health personnel, as well as

emergency service people (police, fire and ambulance drivers) on a basis whereby the hospitals and governmental institutions at the local level would find it attractive to require their employees to take such courses. In addition, teaching manuals should be distributed at no cost to each of these organizations. The Government should also undertake to distribute a supply of glucogon to the school systems of this country with the stipulation that school nurses at institutions receiving free glucogon must receive instruction in identifying diabetes, in administering the glucogon and in the minimum care and treatment of the many youthful diabetics that are in those systems.

3. Public Education - The first and most critical area in regard to dealing with the general public with respect to diabetes is detection. By continually alerting the public to the existence of the ailment and identifying symptoms, the volunteer health organizations, including the A.D.A., have created a level of public awareness that is increasing annually. The affiliates of A.D.A. annually conduct a detection drive -- in the greater Philadelphia area this campaign annually screens approximately 25,000 individuals and, I should add, locates well over 1,000 individuals who are considered by reason of the test results to be "probable" diabetics, and those individuals are referred to their private physicians.

Among the more serious consequences faced by diabetics are difficulties in obtaining insurance (both life, and health and accident), and also in the discrimination that exists in many industries against

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the hiring of diabetics. The A.D.A. has been successful in convincing several insurers that diabetics who are under the care and treatment of a physician, and whose diabetes is under control, should be insured at standard rates. However, it is regretable that it is only a handful of smaller insurance companies that have come to the fore in this respect, and the larger companies continue to tack on added premiums to policies issued to diabetics. I submit that these additional premiums are, in truth, a direct cost of their diabetes and should be considered as medical payments for Federal income tax purposes as well as for general insurance reimbursement under major medical coverage. With respect to the Federal income tax question, that is obviously a matter which can be recommended by this Commission to the Federal Government; the coverage under major medical insurance, however, is a matter for state regulation, but I would submit that it is entirely appropriate for this Commission to take cognizance of this matter in formulating its recommendations.

The employment matter is far more difficult. Many of the affiliates of A.D.A. have been active in carrying to employers within their geographic area the message that a competent diabetic under the care of a physician, whose diabetes is in control, is no greater health risk in employment than any other person. But, at best, this only is a modest step in the right direction.

I submit that with respect to the insurance matter, as well as in regard to employment, the critical statistics that would bolster the

contentions which I state here today are lacking. My conviction without hard facts will fall on deaf ears among the insurance companies as well as employers in general. I would urge that your Commission recommend that the Government fund an accurate statistical compilation with respect to diabetes, both with regard to its use on matters involving insurance and employment, on the one hand, and with regard to the numbers of diabetics, the incidence of the ailment and its rate of growth in the United States, the mortality rate and average life expectancy, and other statistical data relating to the complications.

4. Research and Scientific Affairs - It goes without saying that we are all most concerned about research with respect to diabetes, and I for one certainly applaud the programs that are being undertaken today. However, when we speak of research, I cannot help but think that it has different connotations to each of us. It ranges, on the one hand, from a searching for a cure or prevention, to the discovery of ways to prevent or reduce serious complications even though a cure has not been achieved, and to the further extreme of work related to alternative means of providing insulin for the body and surgical transplants (even though, I may add, the implications of such measures in regard to complications may be unknown for many years). What are the priorities?

We each have a bias, based for the most part on our personal involvements and the degrees of optimism or pessimism that we each have, perhaps better stated as our tolerance levels. My personal bias, for

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example, is that research efforts should be directed towards preventing or reducing the seriousness of complications from the illness. And I suppose that is the most natural view for a father of two diabetic children to advocate. And then, of course, I have my "by the ways". To begin, by the way, I would like our researchers to find some method of preventing my grandchildren, yet unborn, from becoming diabetics. And then, by the way, if I am not too greedy, I would like my children to be cured. But I must say to you, in all honesty, I would hope that funds be directed first towards preventing complications, secondly towards preventing onset, and then towards a cure which, in my judgment, is probably beyond the capability of anyone.

All that is spoken as a layman and as a parent. To my mind, being practical about it, research equates with money being well directed. I would like to mention briefly the three-pronged research program of the American Diabetes Association. First, it involves the funding of senior investigators over a period of five years so that A.D.A. and each researcher selected is assured of a continuity of efforts once undertaken. These awards are made on a peer group selective process, after careful screening of applicants, and it is premised on the assumption that the basic program towards achieving the "answer" will come from the application of the best minds available. The American Diabetes Association is committed to funding those minds to induce them to work in our behalf. A second aspect of the program is to fund the young investigator, on an annual basis, so as to get him started in the field and to enable the institution with which he is connected to permit him to devote his

investigative work towards the problems of diabetes. There are several differences between these two programs: the former involves far more money to the individual and over a longer period of time, and most basically it involves the selection of men considered outstanding in the field, whereas the latter is aimed at trying to induce study by a young, qualified investigator who needs the funds really to get started. The third prong of the research program involves grants for a stated number of dollars to investigate projects submitted by applicants to the A.D.A. research committee. These studies are carefully screened: some are rejected because the research committee feels that they are not worthy of funding, others are rejected because of a lack of available funds, and the balance are fully funded.

During the year 1974 the American Diabetes Association and its affiliates combined spent approximately $800,000 on research. Efforts are being made to increase our fund raising for the current year so as to provide far more dollars for research. But I submit that this, together with whatever funds are raised by other organizations, is nothing more than a drop in the proverbial bucket. We need more than simply drops in the bucket, and in that respect we appeal to this Commission to urge a major supplement by the Federal Government to the important contributions being made by the Private Sector.

I think that it should also be brought to the attention of this Commission that in regard to scientific affairs, in addition to the

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research program, the American Diabetes Association is a prime moving force. It is engaged regularly in working with manufacturers of therapeutic agents as it did in the development of U-100 insulin and related syringes, and more recently in regard to working with the Federal Drug Administration as well as the manufacturers in regard to the major problem of eliminating U-80 insulin from distribution in the United States. The A.D.A. is recognized by F.D.A. as the professional volunteer health organization with which it must discuss these pressing problems, and fortunately our professional section has been available to carry out this program. The A.D.A. also fills the important function of being spokesman in regard to scientific affairs dealing with the subject of diabetes, which quite properly it must do as the recognized organization of the professionals (both researchers and clinicians) who are involved with diabetes. I have in mind the recent controversy concerning the U.G.D.P. study.

My purpose in bringing to your attention this role of A.D.A., is to let you know that there is a professional watch-dog organization that deals with the drug industry and appropriate governmental agencies in regard to scientific matters. I do not think that it would be in order for your Commission to recommend that a Government watch-dog be added inasmuch as this responsibility can be carried on so well by A.D.A., and hopefully the dollars that otherwise would have been spent on such a watch-dog group could be better directed towards research and the other aspects of the program I mentioned to you today.

In summation I would like to comment that we hear so often these days talk concerning our quality of life. Consider, if you will, the quality of life of a person suffering from diabetes, particularly if that person is from the less advantaged groups of our society, both educationally and economically: A child daily inserting a needle to maintain life, adjusting to employment problems, limiting his level of activity, and guarding always against reactions from too much or too little insulin. Does such a person raise a family, and if so, to what end? Will he be breeding diabetics? Will his health permit him to provide decently for himself and his family? Will he even know how to cope with his illness, both from the standpoint of day to day handling as well as the emotional problems that could result?

For people in such a circumstance, the implications of this illness are ever present and most dramatic. I urgently plead that you recommend a program that provides for education and research in a manner in which the Government will shoulder those responsibilities that the Private Sector cannot. Action is long overdue; delay will merely condemn that many more Americans to a level of life which otherwise can be avoided.

Thank you for indulging me with the length of my remarks.

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Testimony Presented to the
National Commission on Diabetes
by: Ms. Nettie Richter

Dear Ladies and Gentleman of the Commission:

I come before you today as the mother of a diabetic child and as a Vice-President of American Diabetes Association, Delaware Valley Affiliate. Most important, I come as a human being interested in the pain, suffering and anguish of diabetics of all ages. My name is Nettie Richter and I have been a volunteer in the field of diabetes for the past ten years.

I appreciate this opportunity to express my feelings and share my ideas with you today on a subject that is important to millions of human beings in our country. Yes, millions of people are interested in what we say here today. It makes me feel humble to be one person who can, in some small way, help this multitude of suffering human beings.

The estimate of diabetics is 5 million people in the United States alone. I feel this is a distorted and deceiving judgement, as the more realistic count is closer to double that amount, or 10 million human lives. These are people that have been helped very little, or not at all by the govern ment of their own country. But I am not here today to quote statistics to you. You, the members of the Commission are knowledgeable and well-informed. You are well aware of the prevelance of diabetes and its rapid growth in recent years. Diabetes is fast becoming the number one health menace to Americans of all ages.

My story today is that of myself, my family and my daughter , who became diabetic ten years ago at the age of ten years. Kathy has been a fortunate diabetic. She had the support and understanding of people who loved her while she was growing up. She had a family who was able to buy insulin for her two shots a day and pay for excellent medical care. She was surrounded by people who read and learned about diabetes, and became para-professional in their ability to deal with her problem. Not all diabetics are as lucky as she.

So Kathy should have been happy and carefree. After all Banting and Dr. Best had discovered insulin in time for her. She was alive as she would not have been before their marvelous discovery. She was able to have fun, go to parties, engage in sports. She was able to deal even with "shooting up" in public restrooms, automobiles and school lavatories. She struggled valiantly with urine tests at inopportune moments, endless insulin reactions, limited diet and the fact that she was always different than other girls. Our whole family handled the known facts beautifully. It was the unknown that haunted us. It is the unknown factors that haunt all diabetics today. What are these unknown areas that we must live with every day?

The first is BLINDNESS. Diabetes is the second leading cause of blindness today. At what moment can a twenty-year-old expect to lose her eyesight and live in a world of darkness? It may come slowly through diabetic retinopathy or it may come in an instant. If this happens, of course, the various associations for the blind can help her adjust and become a useful human being. But remember that our society and our government in particular have done little to prevent that blindness from occurring in the first place.

Perhaps she will be saved fom blindness and can look forward to ARTERIOSCLEROSIS or a massive STROKE or some other form of CARDIOVASCULAR DISEASE. After all, diabetes is the fifth leading cause of heart-attacks today. And of course any death will be listed as caused by the heart- attack , which will give the American Heart Association more statistics for their fund-raising charts.

Better yet, how about KIDNEY FAILURE and renal complications? This is a horror to dream of, yet it is a reality that many diabetics must face in the future. In the renal section of Einstein Hospital, Northern division, I personally met many diabetics who were undergoing dialysis because of the failure of their kidneys. Do you believe that the U.S. government paid the money to sustain the diabetics on these machines, yet has spent only an infintesimal amount to prevent the diabetes or to find a cure for the disease?

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I could go on and on to relate the horrors of complications my daughter and other diabetics envision for their future. A girl of twenty, engaged to a delightful young man, should forsee wonderful experiences. Yet the horrors of the future lurk there and we cannot escape them. Ladies and Gentlemen of the Commission, today you may be able to change or deter these probabilities by planning to fund adequate research programs, by planning to train medical research personnel, by funding adequate facilities for diabetes research. There has been mounted a national campaign to conquer cancer and a nationwide effort to prevent heart disease. Now we are coming to a time when we need to put forth our efforts and our hearts and our voices to tell the world that a national health menace can be prevented and perhaps even cured. Today you have the opportunity to adequately fund both basic and applied research in the field of diabetes. And I urge you and plead with you to do so with all the determination you can gather here today.

There are two people I would have liked to bring with me here today to testify before you. One is Jacquelyn Freed Browndorf. During my young teen-age years we were inseparable friends - bicycling, dating, and studying together. Jackie was a warm human being with a small difference fom ather girls. She gave herself insulin every day. Jackie and I both grew up, married and raised families. I cannot ask her to speak before you today. Ten years ago, at the age of thirty-two She suffered a massive heart attack, and died after a week of intense suffering and pain. She left her own young son, an adopted daughter and her husband. I have not forgotten her.

The other is a young man, Robert Dash, Who I knew not quite as well, but always admired. I watched him grow up into a handsome young man, well-spoken and quite bright. I saw him at family gatherings since he was related to my own first cousin. He married and had children, all the while administering his insulin shots.

Bobby died just one year ago after several years of agony due to failing kidneys, dialysis, unsuccessful kidney transplant ; until there was no vein left that would sustain his endless needles and tubes. I have not forgotten him.

And what has been done in the ten years since Jackie died and the one year since Bobby died to prevent other diabetics from suffering the same fate? Very little we would all agree. We are just beginning to take the first faltering steps toward the research that we need. Where will the money for this research come from? Private groups can raise funds of course. American Diabetes Association has funded grants each year , as have other interested groups of people. But the large amounts of monies needed must eventually come from our own government.

I hope that in ten years from today I will not stand before you, to tell the same sad and heartbreaking stories about my own daughter and about other diabetic children I know and love. And that, Ladies and Gentlemen of the Commission is why we are all here today.

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Testimony Presented to the
National Commission on Diabetes
by: Ms. Ellie Brief

Mrs. Ellie Brief
1044 Owl La.
Cherry Hill, N.J. 08003

Ladies and Gentlemen,

My name is Ellie Brief. I am the mother of a 9 year old diabetic named Lisa. She has been diabetic for 7½ years, since Sept. 1967. At that time my knowledge of Diabetes Mellitus was negligible. I knew it had something to do with sugar, but that was about all.

My education all started when my 17 month old baby was taken to the hospital in a coma. Prior to that night she had been to the doctor's office 3 times within a period of 9 days. Her symptoms were classic; constant drinking, wetting and lethargy. However, a proper diagnosis had not been obtained until a consulting physician was called in and immediately sent her to the hospital. As I look back on this experience, I can't help but think that an informative poster in the doctor's waiting room could have prevented the first 24 hours in the hospital.

At the hospital the chief resident told us that a blood sugar had been done and she was in Diabetic coma. We would have to wait all night to see whether or not she would live. An I.V. had to be used, but they were not able to find a vein in her arm big enough, so a surgeon had to cut into her ankle. By morning she was conscious, although she had to stay in the hospital for 5 days.

At 17 months, Lisa was a precosious child. She spoke like a 4 year old, but this did not help her understand her disease or the shots of insulin the nurses had to give her three times a day.

My education also started. I read all the books that were given to me. There was very little written about Juvenile Diabetes. The specialist in charge of my daughter primarily took care of adults. He was not familiar with insulin reactions in infants. How could I tell if she was merely irritable or having an insulin reaction? I had to learn on my own. Only after a number of months and some frightening reactions did I become familiar with the symptoms, and they were not always the same each time. It took Lisa about 2 years before she realized a reaction was beginning. Neither did he know the problems of eating that can occur with a child diabetic. How do you regulate the food intake or the exercise of a 17 month old baby. He was not aware of the sleepless nights mothers go through wondering if their child will have an insulin reaction while they are sleeping, or walking home from school. The pressures placed on the parents are also great, as a result of the constant vigil that is required. Even if a neighbor is willing to babysit for an evening, not many of them have the knowledge or desire to treat or be responsible if the child has an insulin reaction.

Lisa gradually began to accept her disease and the disappointments associated with it, although the denial of candy and sweets often creates

hardships because it makes her different from other children. However, Lisa has never learned to accept her injections. It is a very unpleasant way to start the day, and possibly this is her way of rebelling against a disease that she cannot understand.

Now that she reads, her questions are more pathetic. What do I say when she reads that Diabetes is the major cause of new blindness? Do I tell her it won't happen to her? I don't know if it will or not. I tell her that I hope we have a cure very soon so it won't happen to her.

What do I say when she says her arms are swollen and sore from the injections. She doesn't like to wear sleeveless shirts because the kids in class notice and sometimes make remarks.

Government funding of existing research projects could enable Lisa and Millions of other diabetics to live full and productive lives without the horrendous complications that presently confront them.....

Thank you for your attention.

Respectively

Ellie Brief

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Testimony Presented to the
National Commission on Diabetes
by: Mr. William Talbert

Dr. Crofford, members of the Commission, ladies and gentlemen. . . my name is Bill Talbert.

I have been a diabetic for 48 years -- and, in many ways, a very lucky one. When I first contacted diabetes at the age of nine, insulin had just been discovered. A few years earlier, my outlook for survival would have been bleak. But, I was more fortunate -- I began taking my daily injections of insulin, and though my life certainly underwent a tremendous change, I kept on "living".

But what my father saw was my cautious, almost gingerly existence -- as I took my three shots each day, weighed my food on a gram scale, was careful never to exert myself -- and lived in fear of what might happen to me -- hardly the son he knew. Finally he had all he could take. Frustrated at not knowing how to help me lead a fuller and more active life, my father went to see Waldo Nelson, a young doctor at the Children's Hospital in Cincinnati, Ohio.

He explained to Dr. Nelson that he had been watching his young son become completely frustrated by unactivity and wanted to know if there was anything that could be done. "Yes", said Dr. Nelson, "If you are willing to gamble a little -- there is."

It was April when we took that gamble, and I started playing tennis. By the end of September of that year, I was the tenth ranked boy tennis player in the United States.

It was an important breakthrough -- for me, personally, and for all diabetics because from that small start, we established the value of exercise -- which, as we all now know, is a critical part of any diabetic's regimen.

Yes, I've been lucky. My father and Dr. Nelson gave me the very positive outlook which I have kept all these years. . .one that has enabled me to live a full, active, productive life.

But I emphasize the fact that I have been very, very lucky. For in my work with the juvenile diabetes foundation and as a member of their Board of Directors, I have seen and heard of so many other people who have taken good care of themselves, who have a positive attitude, and who have attempted to live satisfying and full lives -- and who, despite all their care and outlook, have suffered the devastating and cripling consequences that are too often a part of this disease. And the terrible frustration is that 54 years after we first learned how to control diabetes, we have moved forward so very little.

Yes, we can keep diabetics alive -- but we can't stop the complications and the destruction -- we don't know how: we don't know what causes the disease, and so we can't prevent it: and most of all, we can't cure it. Yet, we can help the diabetic to survive and have children, and possibly pass the tendency along to them. . .we can extend life expectancy, as a whole, so now more people have a chance of developing diabetes. . .and because we haven't stopped it, diabetes has increased to the point where it is now a major health problem -- and I do emphasize major!

By conservative estimates, diabetes afflicts ten million people in the United States. It is the leading cause among new cases of blindness and the fifth leading cause of death from disease. Its victims run a much greater risk of heart attacks, stroke, kidney disease, nerve damage, and loss of limb to gangrene. And yet, there are still many, many people who foolishly think of it as an "okay" disease. . . who say, "Thank goodness it's only diabetes." How wrong they are!

Yes, I have been lucky, and I'm very thankful for that. But I know too that all the complications can happen to me.

I -- we -- all diabetics and future diabetics -- need something much more tangible, much more substantial if we are to keep our hopes and ourselves alive. We need research -- intensified and expanded until we find a cure. I firmly believe that in this country with our knowledge and dedicated people we can find that cure and eventually will. And so I ask you, members of the Commission, to give strong emphasis to our need for research funds -- to help those of us who are already living with diabetes and its complications. . . and to reduce, and hopefully finally eliminate the astounding numbers who might join our ranks in the future.

Thank you.

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Testimony Presented to the
National Commission on Diabetes
by: Mr. Maurice Singer

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My name is Maurice Singer. I am Vice President of the AMERICAN DIABETES ASSOCIATION--Delaware Valley Affiliate.

I believe it is the responsibility of the Federal Government to provide funds through NIH with the guidance of this committee to do the following:

1. RESEARCH: The foremost objective should be to fund research. The health agencies like A.D.A. will never be able to do an adequate job of funding research. This funding should not be a token effort as before of $5-7 million, but $25 to $50 million or more a year.

2. CENTERS: A data bank should be set up to collect, collate and store past and current research work. This should be the type of center where a researcher can get all currently available information on diabetes. In addition this center should have the task of gathering statistical information about diabetes such as:

   a. How many diabetics there are, both juvenile and adult?
   b. Where they live, urban, suburban or rural? Also what area of the Country?
   c. When they become diabetic--age--time of year.
   d. Relevant facts on their life style.
   e. Genetic history, etc.

3. SERVICES: Provide education testing, and other services to the public. This I believe can best be done through A.D.A. Here in the Delaware Valley are some of the activities we conduct.

   a. We screened 25,000 people last year with diabetic tests.
   b. The A.D.A. holds professional forums to help keep our doctors informed and to provide a forum for exchange of ideas and treatment.
   c. We provide patient education through dissemination of literature, the A.D.A. Forecast, and through monthly chapter meetings with our professional section providing speakers.
   d. Camp Firefly--We have a camp here in Pennsylvania where we provide four two-week sessions for children with

diabetes. They learn about this lousy disease and how to care for themselves. Camp Firefly is an overnite camp with complete facilities for food and lodgining. All of these services need to be expanded.

Since the Second World War the Federal Government has done very little to combat diabetes. It is time the government not only got started, but also make up for the years of neglect. Let us get the money for the research and otherprograms I have mentioned, so that my daughter and the millions of other diabetics do not have to face a shortened life-span, blindness, kidney, heart and other vascular complications. The needs are here and now. Lets meet our responsibilities.

Thank you.

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Testimony Presented to the
National Commission on Diabetes
by: Dr. Robert Kaye

STATEMENT TO NATIONAL COMMISSION ON DIABETES

By

Robert Kaye, M. D.

Professor and Chairman, Department
of Pediatrics, Hahnemann Hospital
and
Chairman, Medical Advisory Board,
National Juvenile Diabetes Foundation

I wish to express my appreciation to the large group of interested laymen, legislators and scientists both clinical and basic whose efforts have culminated in the passage of recent legislation which will greatly enhance our country's potential in diabetes related research and care. I appreciate the opportunity of presenting my thoughts to members of the National Commission on Diabetes who are charged with the responsibility of giving direction to the Federal Diabetes Program.

I have been involved in diabetic research and patient care since completion of my pediatric and research training in 1948. I have enjoyed both aspects of my work. I have, however, often experienced a sense of unworthiness and guilt in the face of the confidence and trust that I have been given by my patients and their parents. This feeling of inadequacy, which I believe is shared by all conscientious diabetologists, comes from an awareness of our present inability to preserve the health and well-being of so many of our young diabetic patients as they grow into adult life. The reality of the clinicians' powerlessness to stem the disheartening probabilities of significant angiopathic and neuropathic complications of juvenile diabetes is emphasized by the fact that the life expectancy for juvenile diabetics

has shown no improvement based on a comparison of data for the periods of 1960-1966 with those of 1956-1959. I strongly suspect that the same situation holds for 1975.

I emphasize our present limitations in order to suggest that the major portion of the funds to be made available shortly, be directed toward the acquisition of new knowledge which can be used to move us from our present position of "treading water" to one which will provide us with the means of significantly improving the outlook for our patients. The need for channeling the major portion of available funds into research which will generate new knowledge, rather than to care and education, is well expressed by a statement of Stefan Fajans, past President of the American Diabetes Association and a current member of the Medical Advisory Board of the Juvenile Diabetes Foundation, "We cannot teach what we do not know".

I would like to propose certain areas including support of manpower and research directions which I believe would be productive:

I. Manpower

A. Support of Established Investigators in Diabetes

I suggest that 15-20 established investigators be selected as recipients of Career Diabetes Research Professorships which would provide funds for their salaries and basal support for their laboratories. The individuals should be members of basic or clinical science departments in Medical Schools or Research Institutes who have given evidence of significant achievement in diabetes-related research and who are of an age that 15-25

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additional years of productive research effort might be anticipated. With this degree and duration of support the awardees would be in a position to devise and carry through long range innovative research work. Establishment of such awards would attract individuals of unusual research talent to devote their research efforts to the unsolved problems of diabetes.

B. Support of Post-Doctoral Fellowships for Continued Development of Diabetes Research Manpower:

I believe that it is necessary to increase the number of young people choosing careers devoted to diabetes-related research by additional support of Post-Doctoral Fellowships. Recognizing that it is not to be expected that all significant advances applicable to diabetes will come from individuals whose primary interest is in diabetes,* a significant number, perhaps 50 percent, of the fellowships should be awarded to individuals with career research goals in basic sciences; especially biochemistry and in clinical sciences; especially pediatric and adult endocrinology. I believe that only individuals of exceptional promise should be the recipient of these awards and therefore the number selected should be flexible, perhaps 30-50 per year. By selecting individuals with a primary interest in medical science other than diabetes, we would contribute to the advance of medical science as a whole which must benefit diabetes research and also avoid the

* Somatostatin, tissue culture techniques, transplant technology, proinsulin, polypeptide structural analysis, virus identification, immunologic and genetic techniques.

onus of advancing only the interests of diabetes at the expense of many other of man's unsolved medical problems.

II. Research Directions and Unmet Research Needs

As an indication of the current interest of American and Canadian Medical Scientists in seeking research support from agencies other than the N.I.H., the Juvenile Diabetes Foundation in its second year of operation has received applications for Research and Fellowship Grants totalling 6.9 million dollars for the next three years and 2.5 million for the coming fiscal year.

A. General Research Support

I believe that part of the research funds to be made available under Diabetes Legislation should be allocated to each of the Institutes of the N.I.H. to support basic research in their area of interest on the assumption that advancement of medical knowledge in all areas will have application to the unsolved problems of diabetes.

B. Diabetes Related Research

1. There is need for increased availability to investigators in diabetes, of animals which develop spontaneous, insulin-deficient diabetes such as the Chinese hamster and the S.P.F. Wistar rat. It would be appropriate to use federal funds for the purpose of breeding sufficient numbers of such animals to meet the needs of all investigators. There are many problems which can best be studied in an imals. Among these are the possible reversibility of the structural and functional changes in the pancreas which characterize the pre and clinical diabetic state,

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the effects of diabetic control on the incidence and severity of complications, the evolution of the physical and biochemical concomitants of microangiopathy, the basis for the clinical remission in juvenile diabetes and experimental efforts to increase its duration and many others.

2. Pancreas Replacement

Diabetes research funds should support research involving pancreas replacement by transplant of whole pancreas and islets isolated from whole pancreas or grown in tissue culture. Basic research should be supported in expanding our knowledge of histocompatibility techniques and for modifying the rejection phenomenon.

3. Genetic Studies

There is need to identify and physiologically characterize sub-groups of diabetes and to identify their patterns of inheritance. Maturity-onset diabetes of the young described by Tattersall and Fajans is an entity with distinct clinical, genetic and probably prognostic differences from the usual type of diabetes in the young. Continued studies to identify other diabetic sub-groups should yield significant clinical insights. Further studies of histocompatibility types among diabetics should be rewarding.

4. Mechanism of Angiopathic Complications

Strong support should be given to basic and applied research on the biology of small and large blood vessels and how they are affected by diabetes. This is the area in which most of the morbidity

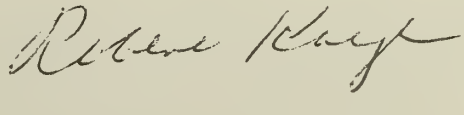
and mortality of diabetes is experienced. There exist promising leads in this area in the work of Gabbay involving sugar alcohols, of Spiro in altered glycoproteins and in that of Varko who has evidence for accelerated pericyte death as the basic cause of capillary basement membrane thickening.

5. Rapid Dissemination of Information

While publications, conferences and bibliographies are available it would be helpful to diabetes investigators to create a research information newsletter which might be a joint responsibility of the Director of the N.I.H. Diabetes Section and the Career Diabetes Research Professors. This communication could lead to more rapid dissemination of diabetes related research information.

In concluding, I am aware that I have not touched on the areas of diabetes education and establishment of Centers for Research, Education and Treatment. While these efforts are important I believe that their support should be subordinate to the increase in resources for the support of research and development of individuals of unusual capabilities to carry it out. In this way we will move forward to the day when physicians can offer their patients prevention, control or cure of diabetes.

I am grateful for the opportunity to make this statement.



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Testimony Presented to the
National Commission on Diabetes
by: Mrs. Jerome Kaplan

I feel privileged to testify before this Commission today. The knowledge and expertise in the field of diabetes that the Commission embodies is outstanding and I do not presume to direct your actions. I come to bring to your attention critical weaknesses in the area of diabetes that have come to my attention. Some I know about because of my activities with the American Diabetes Association and some I know about from a very personal family situation.

I've spoken to parents who could afford to buy insulin and syringes for their diabetic child but who then could not afford to spend anything for that child or for other children in the family for any other activities. The choice was syringes and insulin or movies, syringes and insulin or an outing, syringes and insulin or a trip, syringes and insulin or new clothes. Try to tell a child he's just like everyone else when the finances of a family revolve around him. Every time we talk about a diabetic we must multiply that number by two or three or four because we are talking about an entire family that is affected by this disease, not just one person.

I've spoken to parents who couldn't go away on vacation because they could make no provisions for their diabetic child to be cared for while they were away.

I've spoken to a wife whose husband left her because diabetes had made him impotent.

I've spoken to a girl who was refused a job as a secretary because she was a diabetic.

I've spoken to patients who just don't understand the disease and whose doctors just do not have the time to spend with them...or perhaps do not really understand the disese themselves.

I've spoken to parents whose children have become "coat watchers" because school teachers are afraid of "something terrible" happening in the classroom.

As the mother of an eleven year old daughter who developed diabetes when she was two years old, I can tell you diabetes is not an easy disease to live with. You never know, until you hear the moaning in the middle of the night, that what you though was a nicely balanced control has suddenly, without any warning, turned into a severe insulin reaction with convulsions.

You never know what to answer your daughter when, after giving herself two injections a day for years without a word of complaint, she asks what she should do now because all the areas that she's been using for injections have become puffy and sore and she can't find a place for the next needle.

What do you do when you've worked for nine years to raise your daughter to feel she's just the same as any other little girl and can do anything any other little girl can do and then you get a call from a Girl Scout leader who says that this little girl can't go on an overnight camping trip with her troop because she has diabetes. A diabetic child looks like every other child but before too long it becomes apparent that inside they do not look the same, either physically or emotionally.

And these instances come from our life, which surrounds a happy, well adjusted child...From a family that is lucky enough to be able to provide many of the "fringe benefits" that every family is not able to provide. What must the situation be for the families who are culturally, socially, and/or financially deprived. Someone has to hold their lives together.

I'll never forget the panel of teenagers who presented a program for the Lehigh Valley Diabetes Association some years ago. They had all had diabetes for many years and spoke of their adjustment to their disease. I identified very closely with one young lady, a senior in high school. She was bubbly, cute, personable, well spoken, and obviously well adjusted. To a mother of a four year old girl with diabetes she said, subconsciously, "Relax! Your daughter will grow up as happy and confident as I am!" and in the back of my mind I did relax and I often thought of this young lady. I saw her wedding announcement in the paper two years after that and I was overjoyed because it showed her happy life was continuing. And I say her obituary notice a year later when a flu epidemic hit our area.

I want a cure for this disease. I want my daughter to stop having to inject insulin, I want to stop worrying about reactions and convulsions, I want to forget about vascular problems and possible blindness. That's a selfish attitude but I think all mothers are selfish about their children. So I urge you to fund research to eliminate this disease.

And I urge you to help the people who have this disease who may not live to see the cure, or perhaps to enable them to live until that day. Insulin has bought us time, has given us living people; what kind of living do they do?

When we view, on a national basis, the current status of diabetes education and emotional support, the ptpicture is quite pitiful. There are pocket areas where outstanding programs have been set up and are operating beautifully, but the rest of the country consists of small chapters of national organizamanned by volunteers trying to do what they think is right. Evaluations

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must be made and criteria established so that every diabetic, regardless of the area in which he lives, will have the opportunity to learn about his disease, know how to take care of himself, and be given the emotional support and guidance that is needed along the way.

So I ask you, really plead with you, to do these two things --

...fund research to find a cure, and

...improve the quality of life of a diabetic while that cure is being sought.

Testimony Presented to the
National Commission on Diabetes
by: Ms. Pollyann Toll

Ladies and Gentlemen of the Commission

I sincerely thank you for the opportunity to stand before you today as the President and Founder of the Juvenile Diabetes Foundation of Southern New Jersey as well as Director of the National Board of this same organization.

Since my initial involvement in the Juvenile Diabetes Foundation, I have been made increasingly aware of the number of people in the Southern New Jersey area as well as it pertains to the general populace who suffer as diabetics every day of their lives from their incurable condition.

I clearly recall how very desperate and depressed I felt when, at the time of my seven year old son's diagnosis as a Juvenile Diabetic, I was handed for my own information copies of booklets which were identical in content to the ones handed to my mother twenty years earlier so that she could learn better how to cope with my newly diagnosed diabetic father's care and requirements. In spite of what should have been clear evidence to me; the lack of progress having been made in diabetes research, I remained hopeful that one day out of the blue I would read of a "great breakthrough" in diabetes investigation which would insure my young son a better and longer life hopefully free of the dibilitating complications of his disease about which I was also forced to learn.

When I helped in the organizing of the Juvenile Diabetes Foundation, I did so when the utter facts and truths as they pertained to my loved ones were made indisputably clear. Lack of funding for diabetes research and investigating was to make my dream at best an elusive one - very likely never to be realized.

We have expended a great deal of time and energy in uncovering these tragic facts. We learned over a period of time that available monies for diabetes research was so insufficient that many bright and interesting candidates were applying their talents elsewhere in the field of research. We also learned that perhaps as many as 10,000,000 Americans were diabetic, but even this statistics was perhaps in question due to diabetes being an unreportable disease and apathy towards its existence being very obvious.

Within two years my local foundation has acquired a mailing list made up of mostly families with diabetic children of over 500 people. We offered them services as it pertained to diet, camping and family counseling where we were at least able to offer comfort and direct solace when children were newly diagnosed or having problems coping with the daily frustrations of being diabetic and therefore not "like other kids." We were able to sympathize and share our limited methods of dealing with the problems of disease in young people that can trigger off at any given moment, shock, temper tantrums, cramped legs, unusual menstrual periods, itching and rash due to high blood sugar, a feeling of dizziness or complete unconsciousness due to low blood sugar and a daily possible feeling a "just not feeling

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well." I must repeat the word, "daily" because the biggest adjustment which must be made by the entire family of the young diabetic is its constant demands for careful supervision when modern methods of child rearing advocate a feeling of independence and an element of freedom for the well adjusted child. We found that in order to accomplish both, it was necessary to watch our diabetic offspring most meticulously and at the same time pretend that we were not. The parents with whom I work are tired, frightened and for the most part very receptive to counseling as it pertains to their own personal needs, as a result of their attempts to live with their children's diabetic conditions.

At this very time, my father lies very ill while helpless doctors confer as to the most advantageous method with which to treat his vascular disease, a most common complication of the disease, diabetes, which would save his lower extremities from amputation, another manifestation of diabetes, while his predicted coronary complications, which he has experienced over the past two years (another diabetic complication) prevents his being considered a good surgical risk. This situation with my beloved father has of course rendered me heartbroken and the additional sadness as I watch my own 16 year old son's envisioning his own future twenty years hence when, at the same point as a diabetic, he too might be in the same condition as his grandfather, results in desperation for his father and me that is indescribable.

I speak to membership of the Juvenile Diabetes Foundation of hope and improvement for our children and loved ones. They in turn work very diligently in order to raise precious funds which in turn go directly to research projects that in turn remain the only chance for a change in the diabetes situation in general. We strongly and emotionally urge that diabetes research become top priority in the entire health and disease world and its funding by the United States Government. We ask that it no longer be looked at in ignorance as to its crippling and fatal manifestations. We humbly request that its incidence in the population be recognized so that the importance of federal funding be made a moral and necessary issue.

I personally ask for more hopeful information to pass along to hundreds of desperately frightened people in my own area and confidence when doing so that some day, before it is too late for these families, that we all will know a world in which all children have an equal chance to be healthy--maybe even our children also. I thank you all for this opportunity to share our thoughts and experiences with you of the Commission. We are confident and optimistic that in turn our having done so will render our dream, elusive as it appears today, a realistic and constructive step forward for tomorrow.

Respectfully submitted by:

Pollyann O. Toll, President
JUVENILE DIABETES FOUNDATION
SOUTHERN NEW JERSEY

Vice President,
JUVENILE DIABETES FOUNDATION

Testimony Presented to the
National Commission on Diabetes
by: Ms. Elinor Silverman

When the Juvenile Diabetes Foundation was founded five years ago, education was established as one of its basic philosophies, and to this philosophy we have remained as dedicated as to fund raising for research.

The apparent lack of educational materials or other educational vehicles at the time of our foundation was appalling. Practically the only instruction about diabetes given to a new diabetic was an exchange list explained by the hospital dietician, confusing and antiquated as exchange lists are. Even the most intelligent patient finds the system of exchanges laborious and extremely difficult to follow.

Some hospitals offer a class or two while the patient is hospitalized, again explaining the exchange list of foods and barely tapping the intricacies of the disease. Most patients emerge totally depressed and utterly confused. It's just too much to absorb at one time.

This mere handful of materials I have here is all that is worthwhile for a new diabetic. Dr. Luther B. Travis' "An Instructional Aid on Juvenile Diabetes Mellitus" is the only viable, comprehensive material we can recommend. Most other materials have been around for years, unrevised and certainly not up to date. The drug companies occasionally change a cover on an old publication and re-circulate it. Actually, these companies have an obligation to develop new materials for their customers. It would take a minimal amount of money for them to develop substantial booklets.

Aware of all this, we of the Juvenile Diabetes Foundation embarked upon an educational program designed to reach scores of people using a mere 3% of our national budget so far. Our program consists completely of trained volunteer services by people willing and capable of donating their time and energies. Our first effort was a "Parents' Counseling Service", in which knowledgeable parents served a real need of new diabetics by meeting, talking, guiding and giving them their personal support. Any questions they felt not competent to answer were, of course, referred to the physician.

Here was the greatest need, right at the onset of the disease. The endless questions, the thirst for knowledge that a person learning to live daily with the disease has. Our parents are always available to answer these questions, a physician is not. Patients feel much freer calling their new contact than their doctors, in many instances. A very close, special relationship develops, and is extremely beneficial to the new patient. Most of our referrals are from doctors, nurses, dieticians, who place great value on our services.

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The hospitals turn to us for educational materials which we always provide free of charge. But again, I must stress, here is a challenge for physicians and drug companies to produce new up-dated materials. One vital subject never mentioned is the emotional aspect of dealing with the diabetic and his family. Many families actually need psychological counseling so as to cope with the daily problems encountered in living with diabetes.

Medical schools and nursing schools lack diabetic emphasis in their courses. We have heard of endless cases of nurses not recognizing or knowing how to deal with a simple insulin reaction. We have been invited to many nursing classes to explain the needs and concerns of the diabetic and, again, we are always asked for materials, cassette tapes, etc., for the new patient, explaining diabetes, since the hospitals apparently don't have the time or ability to handle this themselves.

Each of our chapters plans three or four educational programs during a year, covering every conceivable phase of diabetes, with expert speakers delivering the topics - emotional problems, problems encountered by different age groups, foot care, dental care, pregnancy, dietary problems, and all complications of diabetes. Our teenage discussion groups are always a large draw because they afford children one of the few opportunities they have to meet and exchange views with others of their own age. We have mothers with young diabetic children meeting and sharing their problems, often with a psychologist present to help professionally. Pediatricians greatly encourage this. Diabetics need support at varying points in their lives. This we have recognized and tried to provide. The young child whose care has solely been in his parents' hands needs to be re-oriented at a certain point and taught how to deal with his disease himself. The young adults have special problems which must be recognized and dealt with. These are all the services we, as people experienced with diabetes, can offer. Our only reward is to insure ourselves and our children a long, happy life.

Our Washington chapter has recently developed a film in conjunction with the Washington Board of Education at a very minimal expense. This film can, perhaps, become our strongest teaching vehicle. It can be used in classroom situations, hospitals, police departments, all phases of community life. It is primarily an instructional film dealing with the many problems of juvenile diabetes, and very professionally approached, but definitely aimed at educating the masses.

Our next important area of education was the schools. Many meetings with school nurses have been planned and executed throughout the country. Again our efforts are welcomed, sought after. We have developed a pamphlet explaining diabetes very simply, how to recognize reactions, how to effectively deal with them. We send this to all schools and camps. With 50 chapters now and growing steadily, we feel we can eventually cover school systems all over the country.

Many of our members have appeared on talk shows on TV throughout the country. Reactions to these programs are always the same, complete amazement that diabetes is such a threat, astonishment upon learning the true facts and figures about diabetes. This is missionary work, and we are firmly resolved to this task. Newspaper articles written by talented members constantly appear in newspapers throughout the nation, again alerting and revealing facts and statistics to the generally uninformed public.

An annual conference with seminar and workshop sessions where parents and diabetic children can gather together to learn and discuss problems and new developments of juvenile diabetes held. The conference consists of a mulit-faceted program, including renowned physicians, often researchers, covering the wide scope of the diabetes field.

We have proven that education can be handled without large expenditures. Educational clinics can be incorporated under the same roof as research laboratories. There is absolutely no reason to spend huge amounts of money to construct educational facilities. With our funds increasing yearly through donations, we can allocate more to bolster our volunteer services.

Our hard earned money should not go into mortar and bricks. Existing facilities for education and research should be used wherever psssible to save the money for research. We must concentrate on what we seek - a breakthrough - an eventual cure. For too many of us time is desperately short.

Respectfully submitted,

Elinor Silverman
President, Delaware County Chapter (Pa.)

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Testimony Presented to the
National Commission on Diabetes
by: Dr. Peter Morse

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Louis A. Karp, M.D.

April 23, 1975

Mr. Victor Wartofsky
Information Officer
N.I.A.M.D.D.
National Institutes of Health
Building 31 Room 9 A04
Bethesda, Maryland 20014

Dear Mr. Wartofsky:

The following is a summary of ideas that I wish to present as testimony on 1 May, 1975 in connection with my support of the Juvenile Diabetes Foundation, and the urgent need for allocation of research money by the Federal Government.

The statistics, of course, are becoming quite overwhelming with diabetes now being listed as the major cause of blindness in patients under sixty years of age. The statistics so frequently quoted are awesome in that at least 60% of patients with diabetes mellitus will have progressive retinopathy leading to impairment of vision or blindness. 95% of patients with diabetes mellitus of thirty years or longer duration will develop retinopathy and there has been a marked increase of diabetic retinopathy in the United States in the past thirty-five years. This is due to prolongation of life with greater effectiveness in medical care which, unfortunately, does not favorably influence the course of the retinopathy.

The estimates are that one in twenty people is a potential diabetic and one-fifth of the population are carriers of the trait for diabetes mellitus with a 50% chance of passing the inherited trait of diabetes onto their children.

The estimates from the Harvard School of Public Health prognosticate that blind diabetics will go from 154,700 currently to 573,500 by the year 2000.

It must be emphasized that despite the prolongation of the life of diabetics and the increased excellence of medical care, this does not eliminate the severe complications foremost among which, in terms of productivity and expenditures, must be considered diabetic retinopathy.

No matter how impressive the statistical numbers are, one must also consider that this is a very devastating cause of loss of vision in younger patients. In my own practice, I see sixty diabetic patients a month or some seven hundred and twenty patients a year, many of whom are severely impaired with respect to their vocations and avocations because of diabetic retinopathy.

Mr. Victor Wartofsky
Information Officer

April 23, 1975

The methods of treatment at the present time are effective in a certain number of patients, but the emphasis for research must be entirely re-directed.

Even excluding the devastating effects on the avocation and vocation of these otherwise productive individuals, the other systemic complications such as nephropathy, neuropathy, greater association of arteriosclerotic cardiovascular disease at a younger age are equally devastating complications.

While diabetes mellitus may be listed as a secondary cause in many death certificates, it is certainly an associated underlying cause which does not receive its due.

This is an urgent problem with protean manifestations and efforts directed at the research should be that of a direct bio-chemical and physiological metabolic approach. Research funds should be allocated and an entirely new direction be taken.

Sincerely yours,

Peter H. Morse, M. D.

PHM:agm

cc Mrs. Cynthia Fital
Juvenile Diabetes Foundation
3701 Conshohocken Avenue
Philadelphia, Pa. 19131

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Testimony Presented to the
National Commission on Diabetes
by: Ms. Marian Allen

I am blind as a result of diabetes. I have a heart condition as a result of diabetes. I have neuropathy of the feet, hands, mouth, bladder and bowels as a result of diabetes. Luckily I have not yet died as a result of kidney disease due to diabetes. Many juvenile diabetics in this country today will join me with complications brought on by diabetes.

Seven years ago I started going blind from Diabetic Retinopathy. I was contacted by the state agency that authorizes services to the blind. At that time I was offered and received Braille instruction which did nothing to help me in my daily housework such as cooking, cleaning and shopping, or returning me to active employment. After being housebound, dependent and bored for four years, a friend told me about the Rehabilitation Center for the Newly Blind in Boston. It was the first time I had ever heard that such a service existed.

It was then that I decided to look into existing facilities, including the one in Boston. After deciding that Boston had the program that best suited my needs, I approached the state agency for authorization. After being turned down several times, I made many telephone calls and sought political assistance. I was finally allowed to attend the program of my choice. It has been three years since I received my rehabilitation training.

Today, much to my amazement, many diabetics are still fighting the same issues.

Many diabetics never learn of the total rehabilitation programs. Instead they are offered a couple of inadequate courses, usually consisting of Braille and typing. Agencies serving the blind are frequently unknowledgable about diabetes and are prejudiced against visually impaired diabetics, referring to them as "basket cases". Granted the complications of diabetes do affect rehabilitation programming. For example,the lack of feeling in my legs and feet (Diabetic Neuropathy) certainly affect my gait, balance and ability to discern surface changes; thus my travel training had to be adjusted.

As Diabetic Retinopathy is a progressive disease, specific training at various stages of blindness is necessary. For example, when I was at Boston, my remaining vision assisted me in traveling, even though I was using a cane. As I had further significant losses of vision, I required additional travel training. Most state agencies make no provision to meet the ongoing needs. In an attempt to design a program to meet the specific needs of the visually impaired diabetic, I formed an advisory board of twenty professionals to write a program suitable for a rehabilitation center for diabetics with a possible extension for diabetics on dialysis.

I am here to seek answers to the following questions:

1. What can be done now to prevent the onset of complications in young children with diabetes?
2. What can be done now to provide those ? services to those who already have the complications?

Testimony Presented to the
National Commission on Diabetes
by: Mrs. Elizabeth E. Goffredi

Thoughts to Live by for the Diabetic

The contents include insights into emotional experiences which may often confront the diabetic.

By Elizabeth E. Goffredi, R.N.
A.A.S., Director of Nursing

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Dedication

I would like to sincerely dedicate this book to the late Dr. Anthony Sindoni, Jr., M.D., my physician for seventeen years, for his endless devotion and encouragement so that I may have the initiative to move forward and to live a well-rounded life and to my mother, Mrs. Elizabeth Schultz, for her understanding and patience in helping me face the future, and finally to my husband, Raymond, for his love, loyalty and endless care for my health and well-being.

Preface

As a nurse and a diabetic myself for twenty-two years, I have come to understand many of the feelings, attitudes, and problems that a diabetic encounters through the years. Therefore, with my educational background and my personal experience as a juvenile diabetic, it is my desire to share with you some constructive points and issues which may help you in coping with this chronic metabolic disorder. I sincerely hope that this will shed light on many of the diabetics inner feelings and also enlighten those who know them so that they may better understand.

May this book be a source of your strength so that you can maintain a healthy attitude to live by and an aid in overcoming obstacles successfully.

Hopefully this book will help you to identify sources of conflict within oneself stemming from hidden anxieties about handling the disease and its difficulties. Knowing what one's mind may ponder over and dread may help by bringing it into conscious recognition and fuller awareness. This will allow one to face issues squarely with intellect and reality. In doing so, one will begin to be relieved, feel more secure, happy, and satisfied with oneself. Sharing these views myself may tend to steer the individual away from the sometimes experienced path of undue worry, nervousness, apprehension, or even the beginnings of neurosis.

Although I have taken psychology courses in college, I am not a psychologist nor am I considered as such. However, I myself have a broad background of diabetes mellitus both from personal interest and experience and from knowledge acquired while working in the nursing profession. Therefore, I feel that I may be able to lessen the worry and many difficulties that a

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diabetic may experience particularly because I have been confronted with many myself.

May these words help you overcome and lessen the psychological trauma which burdens many of those afflicted with an illness or a disease especially the diabetic.

The initial realization of any long-term illness can be most upsetting especially to a child when one's world is full of questions and unknowns. At this particular point in any person's life, the need for understanding, strength, and encouragement from another individual is most important. The influence of those around you can be a significant factor in your acceptance or rejection of this illness. However, your own personal attitude carries the greatest weight.

One may deny it, reject it, as well as totally disacknowledge that one has the disorder, especially at first. The first step forward is acceptance of diabetes. From there, the foundation for treating it and dealing successfully with it can begin.

One must be realistic and understand that at the present time diabetes mellitus is not curable but is controllable. Therefore, you can look forward to a normal, useful, and productive life. Maintaining control of your blood sugar level requires a lifetime of cooperation. This may include insulin injections, diet, urine testing, exercise, and knowledge about the illness.

There is an advantage for diabetics living in this time period: The longevity has increased due to better and more knowledgeable medical care and due to the vast antibiotics available. Also, there are more foods available without added sugar such as sodas and water packed fruits. There is more known today about this disorder than in previous decades, but there are still many aspects of it to be explored by science.

I can understand how a child would fear insulin injections and the difficulty a parent may have in administering it. It may

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be tramatizing to the child, but he must learn that this is not a punishment but vitally necessary to maintaining his health and very life because he is loved.

A school-age child may have some difficulty learning to adjust his meals and snacks to corrospond to his activities. He must faithfully eat all of his meals and snacks on time without skipping any. The bedtime snack is also important in preventing insulin shock during the sleeping hours, during which time it is more likely to occur.

Children are harder to control than adults because they are much more active. They may need to be reminded to take care of themselves and to follow the doctors advice rather than stressing it constantly. Continuous preaching about the negative aspects of the disease may cause the child undue worry which may develop into anxiety in later years.

A diabetic child is special but not different. He needs protection but not to be sheltered. He needs to know that he is normal, has the love and security of his parents as any other of his siblings or peers.

He must be instructed adequately so that he can learn to care for himself when a parent is not always with him. He needs to know the symptoms of insulin shock and what to do when they occur. The parent can handle this tactfully so that the child will not be frightened to go to school or other activities by himself. On the other hand, if a parent overemphasizes the illness the child may begin to believe that he is sickly and fragile. This overprotection can result in insecurity and dependency. Therefore, if a child is going to develop a healthy outlook on life

he needs room to grow. This can be accomplished by following the guidelines of parents and yet making your own decisions.

As part of growing up, I can understand feelings of overprotection, dependency, and insecurity which may be additional to those of a non-diabetic. Finding and knowing these feelings or weaknesses can help you to strengthen these areas.

There are a number of things a diabetic tends to be despondent about. A child does not always appreciate being told "don't get hurt". He can respond to this in several ways. He can do as he was told and respect his parents' wishes, and in doing so avoid participation in sports, etc. If this occurs he may begin to feel as an outsider, not belonging, or different. Sometimes more trauma can result psychologically than physically.

All children pass through a stage where there is desire to belong to a group. This is perfectly normal and examples would include the Girl Scouts or youth groups, etc. If a child is demanded to be a "bench warmer" on the side lines instead of a participant he may soon begin to feel somewhat less than his peers and not able to measure up. In response to this he may deny his illness, do exactly as he pleases and take chances. By defying his illness, he may become a "dare devil" or outstanding athlete because of his feelings of inferiority. Therefore, he needs to prove that he is equal or superior to his peers by his demonstration in baseball, etc. An adult businessman with these same feelings may satisfy his need to demonstrate superority by his aggressive drive toward an executive position. These feelings can be resolved if he knows that he is no more or no less of a person because of his diabetes. Therefore, there is no need to prove anything.

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A diabetic must realize that he is not alone. There are many diabetics and you are not the only one. You may consider yourself fortunate when you stop and think of the many other types of illnesses which are handicaping. Nevertheless, a diabetic can make a cripple out of himself if he wants to and feels sorry for himself. It could be easy to pity yourself. But, alot can be accomplished if you put your doubts aside and allow the strength and courage within you to rise above the problems. Facing the many realistic problems in the diabetic's life may result in earlier maturity and ability to handle responsibility.

Some inconveniences must be expected, but that is not a reason to form obstacles or barriers unless you wish to do so. You can do almost anything that you want to do. It may be assuring to know that there are many successful people in the world that hold responsible jobs and have families. These include champion tennis players, movie stars, doctors, and senators who are also diabetics.

Some of the insulin dependent diabetics are distressed by the formation of indentations and tissue atrophy (wasting away) beneath the skin. These are caused by frequent injections into the same areas. Repeated injections into the same tissue sites can result in disfiguring the body image by hollowing the superficial layers of flesh. These indentations can be notably conspicuous. As a measure in preventing this, it is necessary to rotate injection sites (Ex. arms, legs, abdomen). These can be disturbing to the diabetic especially during the summer months when they are more noticable while wearing shorts and swimming

attire. Some diabetics may tend to feel very self-conscious about this, so much so, that it interferes with relaxation and socialization.

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Diabetics may also find it annoying when other children or adults question you about the illness. At times it is difficult to avoid questions and it can be upsetting. People are not always tactful and can be cruel. It can hurt very much especially when others tease a child diabetic. If this is experienced occasionally, one may become defensive about his illness and attempt to "cover it up" and conceal it. In dealing with this problem one must remember that in all walks of life there may be individuals that attempt to belittle you. Making fun of you only displays their own insecurity and ignorance. You can respond by walking away and not paying any attention or you can verbally put the person in his place to show him how unscrupulous he really has been. Nevertheless, it must be understood that any individual with an illness may tend to be somewhat more sensitive about it anyway let alone being confronted with ridicule.

Diabetics may sometimes feel "babied" by teachers, friends, or parents. Some may enjoy it because they welcome attention. Others may resent it and attempt to break away. It sometimes may be difficult to explain this to parents especially when they are so close to you. When parents repeatedly ask, "How do you feel?", and "Are you alright?", it is natural to feel rebellious. If these type of questions are repetitious, they may be rejected by the individual, and; therefore, it may tend to drive the relationship farther apart. However, the reverse is possible but less likely, and the very young, dependent child may crave this and actually welcome it especially if it results in greater attention and fuss then other siblings receive specifically during sibling rivally.

Most young children are intrigued by swimming. But, for the young diabetic, it is a special hazard. Even if he knows how to swim, it is best to have someone with him. This is necessary to prevent the tragedy of drowning due to overexertion causing insulin shock. If a hypoglycemic reaction occurred while one is in the water, unfortunately, he may be too weak to swim to safety or call for help. Therefore, it is best never to swim alone or in deep water (beyond one's neck while standing).

Parents may prefer to watch their child intently in their own pool at home as well as provide them with the added protection of a life jacket. This way the child will not miss out on swimming. As for diving, the risk would be even greater.

College bound high school seniors may be skeptical about applying to colleges or nursing schools for fear of rejection due to their condition. In previous years this was true for admission committee members had the misconception that diabetics did not have the stamina or endurance to suceed in a rigorous educational program. Today, applicants are selected on an individual basis in regards to competition with other students. Being a diabetic does not bar one from acceptance into these institutions.

It may interest you to know that many colleges have been accepting paraplegics (individuals paralyzed from the waist down). They have even constructed ramps for the convenience of these wheelchair students. The challenge is up to you if you have the potential and the initiative. Diabetics are not handicapped from pursuing higher education. The only handicap that one may have is his own doubts about making the grade. However, insulin shock

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can interfere with ones ability to perform, function, and concentrate. A severe insulin reaction which lasts for a considerable amount of time can result in permanent brain damage.

A diabetic should be alert for symptoms particularly when undergoing dental work. This is especially important because if an injection of Novocaine is necessary to dull the pain, it can result in a fluctuation in the blood-sugar level. Therefore, it is important that your dentist is aware that you are a diabetic. Knowing this information will assist him in treating you.

Some dentists prefer to fill minor cavities without an injection, others prefer to use Carbocaine, and some use an aersol (freeze spray). Gas is not recommended for one will not be conscious enough to recognize symptoms of shock or coma which definitely may present a danger for some warning symptoms are subjective (those which are internal and can only be evident by the patient) and, therefore, the dentist would not be able to detect them.

Attending a communion church service may present a problem for the diabetic especially since one must eat his meals on time. Since communion must be taken while fasting, it is not recommended that you delay your breakfast several hours for shock is almost certain. This

This can be resolved by eating breakfast and attending a non-communion service later or eating breakfast, going to church and skipping participation of communion at the altar, or explaining the problem to your minister or priest and asking permission to eat breakfast and still take part in communion. If one is quite strict about his religion and does not wish to

violate the rule of fasting, maybe the head of your religious order can advise you or give you a suggestion.

Female diabetics should point out their condition to their hairdresser as a matter of precaution. This is especially important since many long-term diabetics have developed neuropathy--a disease of the nerves resulting in less feeling or reception to heat or pain. Hairdressers should be cautioned about giving permanents and even doing routine drying of the hair. It is important that the dryer not exceed the medium setting or the patient may burn without even being aware of it.

Burns are common in diabetics if they are not careful. Therefore, they should frequently check the amount of time spent in the sun while sunbathing. They should test the bathtub water with a bath thermometer prior to getting into the tub. They should protect the face, ears, and hands from exposure to windburn or frostbite. The peripheral nerves in the extremities are particularly insensitive to pain. Be aware that topical ointment which creates heat chemically, may butn the skin. Therefore, it is recommended that diabetics seek advice on the use of hot water bottles, heating pads, and electric blankets before using them.

At times a diabetic may feel somewhat alienated. This feeling may occur because you have no one to personally talk to who has this disorder. Those with mutual illnesses may help one ano another by frank discussions after developing a friendly trust. This may be true because you have something in common. Ventilation of ones feelings to someone who understands from a mutual standpoint may be quite helpful. One may feel more at ease to discuss problems with another diabetic because he may have the

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same or similar experience.

It is understandable if a diabetic dreads surgery. It is true that a diabetic is considered more of a risk than a non-diabetic. However, surgery is conducted under controlled conditions and naturally the diabetic who has taken good care of himself has less to fear. It is expected that any individual undergoing surgery would be worried to some extent, and certainly the diabetic may be even more so. This may be due to the serious nature of the operation, knowledge about possible complications, the known fact that diabetics have difficulty healing, or thoughts about the unknown which are yet to be experienced.

Hospitalization and surgery to a child can be most frightening because a child views it as a separation from mother. This is very disturbing psychologically because it creates tension due to a separation anxiety. Removal from ones parents and surroundings can result in a traumatic experience emotionally. The most crucial period for this occurs between 1 and 7 years.

Some diabetics may have mixed feelings about eating out. These may be genuine for not all schools, restaurants, and diners cater to diabetic diets. Therefore, it is up to you to be knowledgeable and to select the correct foods and proportions. Naturally this becomes easy with experience and practice with food substitutions and the exchange lists.

Generally, one will be able to obtain the necessary foods allowed on your diet. However, if there is difficulty the problem can be alleviated by packing a lunch. Sometimes this will stop the temptation of selecting food choices which are not found in your home and not on your diet.

It is an added treat for diabetic children to eat home-made popsickles filled with unsweetened fruit juice and used as a fruit exchange. These popsickle molds may be purchased in food markets or department stores. They are available in aluminum and plastic.

Diabetics like many Americans may have a problem with overweight. Obesity not only taxes the body physically but can shorten ones life-span. It is predicted that diabetics only live 25 to 30 years from the onset of the disease. Overweight can bother one psychologically as well. It may cause one to feel conspicuous, disgusted with his appearance due to general sloppiness, and loss of pride in the way one looks.

Weight reduction in the diabetic needs to be handled carefully by the physician. An insulin dependent diabetic especially should not consider weight reduction dieting without an adjustment in food intake (calories) and insulin by the doctor. Otherwise, this fade could lead to unstable metabolic processes which may result in insulin shock and/or acidosis. The cost of health is a mighty high price to pay for a slender figure or robust physique. Generally speaking, most everyone likes to look nice but one must be realistic and sensible about achieving it. Withdrawing insulin therapy yourself can be most disastrous.

As an inspiring goal for the overweight diabetic, may I point out, usually the need for insulin is diminished with normal weight. In other words, those who are obese generally require larger doses of insulin injections to handle the body processes than would the same individual at his normal body weight.

If possible, it is best to avoid those that are gloomy and pessimistic because this type of thought pattern may be assimilated

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by the diabetic. This only makes one defeated before he starts and conquered before he begins. A more positive way to maintain a healthy life is to keep a grip on ones thinking and reasoning. Certainly those people around you who influence you from a negative viewpoint are not helping your condition, but deterring you.

Most diabetics tire of the same faithful routine at one time or another especially because it is life-long. This is understandable but one must never give up. Your spirit may be refreshed by attending public meetings held by the American Diabetic Association in your area. You may sometimes gain insight into problems and solutions by personal contact with other diabetics who have experienced the same situations as yourself.

Some diabetics may begin to develop an inferiority complex over the years. There is no reason why a diabetic would be less productive and successful provided he takes good care of himself and does not develop complications such as blindness, kidney failure, gangrene, or heart disease. You are equally as good as any other individual and your own self-esteem is a valuable asset to you as a person. Certainly you have nothing to be ashamed of or to feel guilty about because being diabetic is not sinful.

Morale has a great deal to do with ones health. An optimistic viewpoint helps to keep the patient in a better frame of mind. In doing so, one has a brighter outlook and usually is less succeptible to other ailments. States of despair, depression, and pessimism tend to leave the diabetic more prone to illness and an open target for sickness. The mind plays an important role in controlling the body's level of resistance. Therefore, the

diabetic who is happy and content has more stamina in controlling his diabetes because his mind is free from conflict and is not burdened with stress.

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Diabetes may be a cause for embarassment because of the need for frequent voiding (emptying of the bladder). Polyuria (excessive urination) is a common symptom of diabetes especially during the onset and when poorly controlled. This may be annoying and a cause for embarassment especially when it disturbs or interrupts the classroom or the individual's job. When the blood sugar is too high, one may also experience polydipsia (excessive thirst) and attempt to satisfy it by consuming great amounts of water. This only adds to the problem of "running to the bathroom". However, it does help in preventing dehydration and in preventing sugar irritation to the kidneys and bladder as the body eliminates some of the excessive sugar through the urinary tract.

Dinner and dating may also be somewhat of a problem for the diabetic must plan his life making sure that he eats as he should and when he should. This means that late dinners (ex: 8P.M.) must not be accepted or the individual may find his blood sugar dropping because the insulin is still working and there is no consumption of food to balance the medication. This most certainly may result in insulin shock. This experience may be resolved by suggesting an earlier time when accepting a dinner date. Eating later then usual can be adjusted by eating a snack before-hand if the meal is not too much later than routine. Planning to eat two hours later than usual is gambling with time and life. You should prepare for unexpected delays whenever eating out. Always carry sugar, candy, or some other quickly digestible carbohydrate. This will ensure security, more enjoyment, and less nervousness. Incidently, with long delays in meals nervousness may be as much physical as well as psychological. Nervousness, uneasiness,

Cardiac palpitation, headache and tachycardia (rapid pulse) are also symptoms of insulin shock and symptoms of tension and emotional stress. Since emotions or anxiety can produce the same symptoms, it could be difficult for a newly diagnosed diabetic to determine which it is. Therefore, it takes a great deal of personal evaluation on the part of the individual diabetic.

Eating out and trips may sometimes be of concern to the insulin dependent diabetic especially when it is difficult to find a clean rest room in which to administer insulin. Compact injection kits are available with a prescription. However, a clean place to wash your hands is not always at hand. It is recommended that you carry single packets of alcohol sponges as a solution to the problem. Sometimes your own automobile is a much cleaner place for this task. It can be administered in the abdomen or the thigh while still maintaining privacy depending on attire worn. If one is home alone and prefers to inject into the arm, it can be accomplished with good technique and safety by drawing up the insulin dosage first, proping one arm against an arch or doorway to make the skin taut (tightly drawn and firm), and then injecting with the other hand. This particular method is easier when using disposable syringes and needles because the plunger does not move readily and therefore, maintains the desired dosage. Vacationers may find it helpful to know that insulin will maintain its effect without spoiling for thirty days at room temperature while opened and unrefrigerated. However, extremes in temperature and humidity can result in deterioration or contamination. This is evident when insulin changes from its normal coloration or viscosity (the property of fluid to thicken or become gummy).

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Those diabetics seeking employment may find themselves very uncertain. This may be due to known past attitudes of employers as to dependability, reliability, endurance, and performance. For the diabetic, employment is more than holding a job: He must not only display his ability to handle the job but also his stamina and endurance. However, employers today have found and understand that diabetics can be useful, productive employees. On every application I have filled out, I stated that I had well-controlled diabetes mellitus and specified the type and amount of insulin taken daily. From personal experience I have found that disclosing this information has never hindered me to any great extent; but in fact may have helped by indicating the quality of honesty. This may not be true in every case for it may differ depending on situation and individual, nevertheless, it is something to consider.

The diabetic may anticipate the unpleasantness of embarrassment. This may be due to several causes: One may feel conspicuous realizing that others know of your condition and may question you. One may avoid the issue or welcome it as enlightening to others. One may also feel that his ego or status is threatened by the possibility of dizziness, loss of alertness, blackout, or loss of consciousness. It is true that this may be a genuine fear particularly if the individual is uncontrolled and experiencing frequent drops in the blood sugar level, usually below 60 milligrams per milliliter of blood. However, regular visits to the doctor or specialist with careful diet and exercise regime should alleviate this occurrance. Unfortunately there are unkind and unscrupulous people in this world. Therefore, you may be

confronted with so-called jokes in relation to drug addiction. Jokes such as this, if taken to heart can cause discomfort and anxiety. After all, insulin users would not want there injection kit to be referred to as a "fix" because actually it is necessary for their very existence. You may ignore these types of remarks because they are more likely used by those that are ignorant. A display of resentment or great disapproval may only cause the individual to create more unpleasantness. Or, if you are strong, you can tell the individual just what you think.

Another matter of controversy may be whether or not to wear a "Medic Alert" identification bracelet or necklace. This may cause a dating teenager to feel self-conscious about wearing one. You may also feel silly or that it isn't necessary because you will never need it. However, wearing it constantly may save your very life if you should ever become suddenly ill. There are various types available. However, I recommend the one purchased from Turlock, California. It is obtained through a membership application and is reasonably priced. This organization issues you a membership card for your wallet and an identification number which is engraved on the reverse side of the emblem. The center is also responsible for keeping records of all your significant medical history as indicated by you. The phone number may be called from any location in the world, toll free, day or night for emergency information. The question to ask yourself is: Is it worth it to conceal the fact that you are a diabetic and risk the possible outcome? By all means, I am not suggesting that you point it out to every individual that you date, for this may not be in your best interest if you should frighten your companion.

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There is no need to hesitate driving a car or applying for a driver's license. In the past, there has not been any difficulty in obtaining one. A well controlled diabetic should not anticipate dizziness or blackouts. However, it is always best to carry sugar in the car for added security. When driving long distance, it is best to stop every few hours and snack on crackers to ensure your alertness. Driving long periods without a break is not beneficial and could be a hazard. Snacking would guarantee your continued efficiency. A diabetic is usually safe from shock if he eats a full meal every five hours. This is the best way to guarantee health and safety. Ignorance of medical advice can leave the diabetic vulnerable to the consequences.

One may dread diabetic coma due to acidosis.(a disturbance in the acid-base balance of the body resulting in the accumulation of acids). The possibility can be alleviated by urine testing to determine if acetone is present. If the urine is acetone free, there is hardly any chance for going into a coma (deep sleep, unconsciousness) due to extremely elevated blood sugar or from carbohydrate starvation (excessively low blood sugar).

In carbohydrate starvation starch and sugar is not available for utilization by the body. When carbohydrates are not present, fat and protein are then burned for energy. As this occurs acids are released into the blood stream which begin to accumulate. If this persists, acidosis or diabetic coma can result. This may be noted in urine testing when the Clinitest is negative (sugar free) and the test for Acetone or Ketones is positive consistently.

A small amount of acetone may not be cause for alarm. However, if a large amount of it persists for several days, toxins -

may accumulate in the blood and lead to severe illness and unconsciousness. Therefore, it should be reported to your physician as an added precaution and to put your mind at ease.

One may also play tennis if you desire, without undue concern. However, it is best to estimate how long and how hard you intend to play so that you can prepare accordingly. Therefore, if exertion is anticipated, I have found it best to eat a candy bar or something sweet before beginning the game instead of waiting until the blood sugar level drops rapidly.

If you are detained after the normal hours of school or your job, it is best not to push your luck and stay. If the delay is short one can snack. If it will be long, it is best to eat first and then return to your business. Excessive delays can be just as bad as skipping a meal.

Another matter which may be of special concern to the diabetic is whether or not to attend a party, social, or dance. The diabetic may be hesitant because one realizes that eating at these events is part of a social gesture and it can be difficult to take part in eating socially and still maintain your diet when most of the foods are high in sugar content. High carbohydrate foods such as ginger ale, punch, cake, and cookies can be avoided by graciously declining. However, if one is vigorously utilizing energy by dancing, these carbohydrates may be helpful depending on the individual. Unfortunately, most social events offer foods which a diabetic should not eat and to stay healthy it is best not to overindulge. On occasion, I have resolved this problem by taking along my own sugar-free beverage and snacks. In this way you can relax and be sociable. At times you will find some individuals almost

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insisting that you join them in a drink (alcoholic beverage). This can be handled by simply stating, "Thank you anyway, but I don't drink," or by saying that you are watching your calories.

Diabetics contemplating marriage may be skeptical about having children for fear that they may carry the diabetic gene. This is possible but less probable if one marries a non-diabetic or a non-carrier. Knowing that one's offspring could become diabetic may generate some feelings of guilt in the prospective parents. This may not stem from the fact that the child may be diabetic but from knowledge of the possible long-term complications from the duration of the disorder. If this is the case, couples may consider adoption. On the other hand, one's child may never become diabetic and if so a diabetic child can be as healthy as any other normal youngster, particularly because he receives expert medical care, diet, and nutrition beyond that of the average child.

Diabetic wives may fear pregnancy because of the additional strain on the body or possible stillbirth (birth of a dead fetus). The blood sugar level does fluctuate during pregnancy. Therefore, it is necessary for more careful and frequent evaluations by the obstetrician to maintain health.

With modern technique and medical knowledge there is less chance of the mother-to-be developing toxemia of pregnancy which is a complication of early pregnancy resulting from a disorder of metabolism which allows toxins to accumulate in the body. It is characterized by hypertension (high blood pressure), edema (fluid retention and swelling), and albuminuria (protein in the urine). If this complimation should develop, it can be controlled with

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diet and medication so there is no need for alarm. This occurs in the none-diabetic as well.

Diabetic mothers tend to have large babies (8-10 lbs.). This is due to rapid weight gain in the third trimester of pregnancy resulting in edema (fluid accumulation). For this reason diabetic women are usually induced before term to facilitate an easier delivery and as an added assurance of having a viable baby. Therefore, the mother-to-be is usually hospitalized at the thirty-sixth week of gestation and labor is induced with medication. If the pregnancy is carried to term and delivery is impossible, physicians sometimes perform a cesarean section which is surgical removal of the fetus through the abdominal and the uterine walls. This is not an uncommon procedure and is accomplished with the use of anesthesia.

The future for the diabetic is constantly changing and expanding. There are many new and advanced forms of therapy, procedures, and techniques which were unheard of in past decades. Scientists are now experimenting with an "artificial pancreas" which is similiar to the cardiac pacemaker but it regulates the distribution of insulin into the body instead. Doctors are now extracting cataracts which is a complication of diabetes by a new method which alleviates surgery and hospitalization and only requires a few hours to complete. With these advances, the future for the diabetic living in todays world is much more promising. The diabetic today can look forward to a full, well-rounded, and happier life.

Testimony Presented to the
National Commission on Diabetes
by: Ms. Lory Needelman

TO: Victor Wartofsky
National Institutes of Health
Bethesda, Maryland 20014

TESTIMONY FOR MAY 1, 1975 NATIONAL COMMISSION ON DIABETES

PLACE: PHILADELPHIA COLLEGE OF PHYSICIANS

Mr. Chairman, members of the Commission, ladies and gentlemen. I'd like to express my appreciation for this opportunity to appear before the National Commission on Diabetes. It is very fitting to speak to you today for it is the first day of May which means something very special to diabetics. It is the beginning of the month which is proclaimed as Juvenile Diabetes Month--a chance for some funds to be raised for research to help find the cure we pray for so often.

I am President of the Mercer County Chapter of the Juvenile Diabetes Foundation. I am a wife, a parent of two children and I am a diabetic. I am a full-time volunteer for the Juvenile Diabetes Foundation. These roles are constantly being juggled. I give all of myself to doing a good job in each role. Recently I attended a seminar on juggling roles. We were asked to slice a pie designating where our time is allocated. Too much of this pie was cut to allocate my time as a volunteer dedicated to the three goals of Juvenile Diabetes Foundation which are Fsmily Counseling, Education and Fund Raising for a Cure. These 12 hours a day are sincere dedicated hours spent but I resent them. I do it, my family helps, but it should not be necessary. The funds raised should not be done by myself and the many, many other volunteers dedicated to curing diabetes but allocated by the Government toward the fundamental understanding of the cause and potential cures of the disease.

As a parent who is diabetic, I have a great problem. Most child psychology books have one statement in common--being consistent with our children. No one knows the inconsistency of a personality when blood sugar fluctuates as well as a diabetic does. As an adult I try very hard to have the maturity to control my personality changes during these blood sugar changes, but this is a constant battle. The diabetic children and their families have this added problem to the daily diabetic health problems. I suffer, my husband and children thus suffer. I am lucky, they try to understand most of the time and so do my many friends. This is not always so and the consequences are not very pleasant. How do I explain to my three year daughter while I am having a hypoglycemic reaction and must eat sugar to save my life that I cannot stop at this point to give her some also. While having this reaction, she is more demanding of me and I am less responsive than I could be because of my condition. The same

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situation applies when I am hyperglycemic. I am also responsible to a seven year old son needing my attention and as a wife to a very understanding husband and to a newly formed JDF Chapter of over 100 diabetic families. I try to be "well" for all these responsibilities. It is so hard--there are days it is impossible. I go on juggling roles with the handicap of my diabetic condition always with the hope and prayer that it won't be much longer before research will find the cure for diabetes and let me become the whole person I want so very much to be.

I would like to tell you about one of many bad experiences I have had in the last fourteen years of being diabetic. Giving birth to my second child almost caused me to lose my life. After my pre-operative needle I was wheeled into the operating room. I had previously conferred with my doctor and we together decided that 20 units of long lasting insulin would be the best medication to last slowly during the operation. While in the operating room, I asked the nurse to see the insulin I was to be given. The insulin the nurse prepared was regular insulin (fast acting) I pleaded for the nurse to check the records, that a great mistake was being made. No one listened. My hands were literally tied and the pre-op medication was quickly taking effect. Needless to say, I went into severe diabetic shock right after the caesarian operation. Given a spinal I should have remained perfectly still. I could not control my body from convulsing and consequently had severe spinal headaches for several months causing me a nurse to aid myself and my children. Both my children have been critical with hyalind membrane and hypoglycemic reactions upon birth due to my diabetes. Many other serious errors have been made to me in hospitals. The lack of diabetes knowledge is far too great.

Ten years ago I had severe atrophy from the insulin. I called and wrote to diabetes clinics, diabetic specialist and researchers. No help was available. I offered myself for tests on the fatty tissue where the atrophy occurred. From trial and error I discovered in three weeks a cure for me to the atrophy. I had pictures of before and after of the atrophy problem and offered the results to many physicians to document it to maybe help some other atrophied diabetics. Today, 10 years later, what I had discovered is being practiced in many cases. All these years many could have been helped. Now, being associated with the Juvenile Diabetes Foundation, as Education being one of the goals, this cure for me would be heard through the many chapters of the Juvenile Diabetes Foundation. This is one of the reasons I pledge myself.

When speaking to a group of nurses from the East Windsor School District recently on the complications of diabetes, the head nurse said to me "how can you be so cheerful, you are a diabetic, aren't you constantly afraid" I said, "oh, these things could never happen to me." But my dentist just told me of a serious gum disease due to my diabetes, my opthamologist sees the starting signs of retinopathy and my internist just told me I have neuropathy. Will a cure now stop these complications. Help give me and many others a chance to find out.

Testimony Presented to the
National Commission on Diabetes
by: Ms. Joan Swenda

MR. CHAIRMAN, MEMBERS OF THE COMMISSION, LADIES AND GENTLEMEN

TWO YEARS AGO THIS VERY MONTH OF MAY OUR SON TOM, AGE 9 AT THE TIME, WAS STRICKEN WITH DIABETES. THE ONLY WAY I CAN DESCRIBE HOW I FELT WHEN DIABETES WAS VERIFIED IS THAT IF I HELD HIM CLOSE ENOUGH I COULD DRAIN THIS DREADFUL THING OUT OF HIS BODY INTO MINE. I, UNLIKE MOST PARENTS, SUSPECTED THE DISEASE BEFORE TAKING HIM TO THE DOCTOR WHERE I WAS TOLD HE HAD A 797 SUGAR COUNT. I WAS FAMILIAR WITH DIABETES IN SO FAR AS MY NEICE NOW 23, DIABETIC SINCE 6, HAS DIABETIC RETINOPATHY AND MY UNCLE HAD JUST HAD A FOOT AND THEN THE LEG AMPUTATED BFCAUSE OF GANGERINE, A DIABETIC COMPLICATION. THIS UNCLE DIED OF HEART DISEASE ONE YEAR AFTER THE AMPUTATION AND TOM'S BEGINNING OF THE DISEASE.

TOM IS AN ACTIVE 11 YEAR OLD WHO ENJOYS ANY SPORT THAT COMES ALONG AND PLAYS HIS HEART OUT IN EACH OF THEM. I CANNOT SAY HE LOVES SCHOOL AS MUCH OR DOES AS WELL. HE GETS PRAISE AND PUNISHMENT WHEN EACH IS DUE. JUDGING BY HIS 6 OLDER BROTHERS AND SISTERS HE IS A PRETTY NORMAL KID, A LITTLE SPOILED BEING THE BABY, BUT STILL A PRETTY NORMAL KID. HE STICKS PRETTY CLOSE TO HIS DIET AND TAKES HIS NEEDLE EVERY DAY. THIS IS WHERE THE NORMALCY ENDS BECAUSE WITHOUT THAT NEEDLE HE WOULD DIE. IS HE USED TO IT BY NOW? NO, AND PROBABLY NEVER WILL BE. NOT THAT HE CARRIES ON BUT JUST ABOUT ONCE A WEEK HE WILL COMPLAIN IF THE NEEDLE IS A LITTLE DULL OR BLOOD FLOWS. HE WILL SAY THINGS LIKE "I HATE IT!, I HATE IT!" AND THROW THE NEEDLE ACROSS THE FLOOR. MANY TIMES HE WILL SAY "ARE THEY GETTING ANY CLOSER TO CURING ME?" ALL THIS, LADIES AND GENTLEMEN, I CAN ACCEPT BUT WHAT I CANNOT ACCEPT IS A NATION SITTING IDLY BY AND NOT COMING TO GRIPS IN THE REALIZATION THAT "OKAY, INSULIN WAS NOT THE CURE NOW LET'S GET

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BEHIND THE RESEARCH PROGRAMS AND FIND THAT CURE AND PREVENTION ONCE AND FOR ALL."

I DO NOT WANT MY SON'S LIFE TO BE RUSSIAN ROULETTE WITH BLINDNESS, KIDNEY FAILURE AND AMPUTATION. YES, HE LOOKS AND ACTS NORMAL; HIS DISEASE DOES NOT SHOW ON THE OUTSIDE BUT IT IS THERE, LADIES AND GENTLEMEN, IT IS THERE AND IT IS DESTROYING HIM SLOWLY. HOW MANY JUVENILE DIABETICS DO NOT MARRY BECAUSE OF THE FEAR OF BURDENING A YOUNG FAMILY WITH A DISABLED HUSBAND OR WIFE? LAST OCTOBER I WATCHED A FRIEND'S FAMILY STAND HELPLESSLY BY WHILE THEIR WIFE AND MOTHER [AGE 41] DIED OF ALL THE COMPLICATIONS OF DIABETES INCLUDING AMPUTATION. SHE HAD THE BEST MEDICAL CARE BUT THIS WAS TO NO AVAIL.

IT IS UNBELIEVABLE HOW MANY CHILDREN ARE COMING DOWN WITH DIABETES EACH YEAR. THIS IS A NATIONAL HEALTH PROBLEM AND OUR GOVERNMENT BETTER START REALIZING IT AND GIVE A FAIR SHARE OF THE ALLOTED FUNDS FOR DISEASES TO DIABETES.

WE PARENTS HAVE WRITTEN THOUSANDS OF LETTERS TO THE PRESIDENT, CONGRESS, AND NOW WE ARE PLEADING TO YOU TO TAKE OUR CASE TO THE PROPER CHANNELS TO HELP OUR CHILDREN THROUGH RESEARCH.

Testimony Presented to the
National Commission on Diabetes
by: Dr. John R. Williamson
Professor of Biophysics
Johnson Research Foundation

Ladies and Gentlemen:

It gives me great pleasure to express my views to you with regard to the importance of continued and even increased funding for the support of basic research relevant to the problem area of diabetes. The role of the physician and clinical specialist in relation to the diabetic patient is self evident. The patient wishes to have a correct diagnosis, and to have his symptoms aleviated and if possible cured. Likewise, well-directed clinical research in its search for improved methods of detecting incipient diabetics and new treatments of the disease provides a highly justifiable basis for funding.

Research at a more basic level, whether directed towards such studies as the mechanism of hormone action, insulin synthesis and secretion from the pancreatic islets, or chemical composition of the basement membrane, at first sight may appear to pose problems of justification from the narrow viewpoint of goal-oriented funding since the suffering patient is several steps away from the test tube. What, then, are the arguments in favor of broad-based research at the fundamental level of the cell and its constituents? Has the development of knowledge in areas apparently unrelated to the phenomenology of diabetes reached a sufficient stage of advancement that mission oriented research in the diabetes field should be given a special impetus at this time? What are the preferred methods of funding, both from the point of view of the granting agency and the scientist? Does the public have sufficient awareness of the activities and goals of the basic scientist?

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I would like first to draw your attention to the question of what the basic scientist can offer to the general area of diabetic research. A critical consideration is how closely the work should appear to have direct relevance to the etiology, understanding and treatment of the disease. Major advances in a particular field have often originated in completely unrelated areas, and many people have been drawn into more mission-oriented research simply because they realized that a new technical approach or methodology could solve a long-standing problem in that area. Diabetes is a complicated disease in which manifested systems encompass a wide range of tissues and disturbed control mechanisms. It is now recognized to be caused by much more than simply a deficiency of insulin. There is thus plenty of scope for scientists of very different basic interests and areas of expertise to make potentially valuable contributions. To take only one example, the rapidly expanding knowledge concerning the structure and synthesis of membranes, and protein-phospholipid interactions in the membrane could provide a new impetus to the problem of insulin release by the pancreatic islet and how it is controlled. A suitable format for encouraging new developments and advancements in the area of diabetes research would be to encourage the enlistment of basic scientists with an interest but no prior experience in specific diabetes related problems into program projects which have a core of scientists with knowledge and expertise in the area. To a basic scientist such as myself who has both an interest and active participation in the diabetes research area, it is quite clear that new developments and advances stem from a growing understanding of the complex mechanisms for regulating enzyme and transport functions of the cell.

The achievements of basic scientists provide the foundations from which more practical developments such as improved drug therapy or dietary treatments can develop. Undoubtedly greater and faster achievements can be made by encouraging closer cooperation and understanding between the more clinically-oriented researcher and the basic scientist.

Second, a word about funding, since this is a problem of immediate and considerable concern to most scientists. It has to be recognized that scientists as in all professions, vary between the extremes of the superlative to the poor, and that their research efforts encompass a broad range from the truly original to the poorly executed imitative. Consequently, the peer review system, although cumbersome and not without some deficiencies, provides a very effective method of distinguishing between good and bad science. Basically, merit rating reviews, particularly when associated with site visits, have been shown to provide impartial, unbiased judgements. However, how does or should the scientist respond to the news that his grant request has been approved, but that no money is available for funding? Running a laboratory, like any other business, involves not only an initial investment but also continuing expenditures. Most of these are for personnel salaries, and it is clearly very inefficient to lose skilled people trained in certain methodologies because of a temporary embarrassment of funds. One way for the scientist to respond to this situation is by diversification of research effort into a number of different areas so that research support is obtained from a variety of sources. This is often impractical and even undesirable for the younger scientist who is trying

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to establish a reputation and may have heavy teaching responsibilities. For the more senior scientist, this leads to a dilution of effort and the necessity for an inordinate amount of valuable time being spent in writing grant requests and progress reports. Given the fact that funds for research support are limited, and in the forseeable future will not be sufficient to meet the optimal demand, what is the best solution to the dilemma? Clearly, only good research should be funded, but how can its disbursement be optimized? One method is to extend the period of coverage for non-competitive renewals from the present 3 or 5 years to 7 years for the better proposals. Three-year grants should only be awarded in cases where the prognosis for effective research is uncertain. A second method is to encourage program-project funding and discourage short-term contracts. Funding via program-project or even larger center grants has certain advantages to the scientist concerned, which should be clearly recognized quite apart from any administrative or cost-saving features it may have for the funding agencies of NIH. The growth of scientific knowledge and technical developments has led to a proliferation of specialization as well as to a sharp increase in the cost of research. Certain information can only be obtained by use of very expensive equipment which requires special skills for operation or data analysis. A well organized program project promotes an atmosphere which stimulates scientific curiosity and allows sharing of developed areas of expertise amongst the individuals involved. Thus, the whole is indeed greater than the sum of the parts.

Finally, it should be recognized that the better basic scientists are motivated primarily by a curiosity for the unknown. What particular

aspects happen to fire the imagination of a given individual is probably a rather haphazard process, but is surely connected with the type of training they received in their formative years. Hence centers of excellence should be promoted financially where a large number of predoctoral, post-doctoral and M.D. scientists may receive intensive training. The presence of a center with investigators of different interest, experience and formal training will ease an existing gap between pure research and the application of pure research to practical needs. Day by day communications between M.D.'s and scientists will be profitable to the basic scientist who will be more and more atracted by medically oriented problems and will be proud to see some of his research efforts applied to the benefit of the community. On the other hand the medical doctor will increase his knowledge on regulation mechanisms of drugs, hormones and metabolites at a subcellular and molecular level with the result that his knowledge of the etiology, significance of the symptoms, and selection of therapy for the treatment of diabetes will be broadened.

In summary, I trust that the value and role of the basic scientist in research is not seriously questioned. The basic scientist in turn should recognize the specific contributions he can make either directly or indirectly to health problems of concern to the taxpayer. All concerned should recognize that important scientific discoveries rarely come on demand, and that wide degree of flexibility and freedom to pursue research interests is a surer way of achieving overall objectives than an undue obsession with mission-oriented research goals which go beyond the capacity of the scientist to solve in a limited period. Thank you for your attention.

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Testimony Presented to the
National Commission on Diabetes
by: Dr. Elmer Funk, Jr.

Ladies and Gentlemen:

I am Elmer Hendricks Funk, Jr., a physician, a Director of the American Diabetes Association (ADA) Delaware Valley Affiliate, a member of its Executive Commictee and President of Camp Firefly, the Delaware Valley Affiliate's camp for diabetic children which was founded in 1935 and was one of the first such camps in our country.

At the age of 10, 43 years ago, I was found to have juvenile diabetes mellitus by my Father who was a physician and Professor of Therapeutics at Jefferson Medical College. He placed me in the care of his associate, Dr. Garfield Duncan, who specialized in diabetes and later edited the major reference text, "Diseases of Metabolism." A dietician came to live at our house for several weeks to instruct my Mother in diet control. My parents' care and teaching, I am confident, have been an inestimable gift to me. I have had no complications of diabetes mellitus. In school and college I rowed on a crew and today enjoy figure skating in the form of ice dancing often several times a week. I am indeed fortunate and thankful.

From this background I urge you to seek balance in the objectives you set. I hope you will support detection, education and research each equally.

First, I earnestly believe that today more effort and money should be spent to detect diabetes. The fact that there are 5 million diabetics alive and 4 million are not identified explains the problem well, I think. In the Greater Philadelphia area the ADA Delaware Valley Affiliate has often led the pace nationally in diabetes detection. This has, however, been a small approach to the entire population of this area and our nation. More detection is needed.

Second, education must be expanded and increased. It is essential. I am certain my present health and my life are possible because my parents and I were fully trained about the disease, diabetes, and how to control it.

The ADA Forecast which was started by the Delaware Valley Affiliates' own ancestor, the Philadelphia Metabolic Association, has recently been revised to be a stronger medium of communication and education. It has a readership of more than 100,000 and is the major publication which teaches diabetics and their families. Adult diabetics need to be taught and counselled just as much as do children. More and better educational materials, techniques and work are needed. Preparation and distribution of excellent self-teaching media would be an important advance in filling this need.

Camp Firefly of the ADA Delaware Valley Affiliate educates about 140 youngsters a year during its' eight-week summer sessions. Our campers are all juvenile diabetics. They learn as they live with their disease. Teaching by example is a major focus of the Camp program. It is clear from our experience at Firefly as well as in the ADA Delaware Valley Affiliate that more education is needed.

Third, research is also, indeed, essential. It is the hope for the future. Today's research is tomorrow's practice. Important major effort and time are needed to learn more about the causes, control and perhaps cure of diabetes. I strongly support the need for more research.

In summary, I want to emphasize that today's patient must depend on detection of his disease now,and then be taught to control it well today and live successfully with diabetes.in order to be here to benefit from tomorrow's progress.

The members and staff of the ADA, its Delaware Valley Affiliate and Camp Firefly would be pleased to assist you in any way we are able. I thank each of you for the task you have accepted and hope you will call upon us whenever we can be of help.

Very sincerely,

E. H. Funk, Jr., M.D.
5/1/75

Testimony Presented to the
National Commission on Diabetes
by: Ms. Barbara Cavanaugh

Ladies and Gentlemen of the Commission:

I want to express my appreciation for being given the opportunity to report some of the problems and needs of the diabetic. My name is Barbara Cavanaugh and I come to you with the feelings and a juvenile diabetic of 22 years duration.

According to statistics, I should not live to see the next 22 years. In fact, in the next three to five years, I will have lived beyond the average life-time of the juvenile diabetic. And that is not a very pleasant thought at the ripe old age of 30. At this point, I have no plans for kicking off in the next three to five years but I must tell you I live in fear of, as the title of a book goes, "Death at an Early Age". I am not a morbid depressed personality by any means. In fact I enjoy life to the fullest but being a realist, I must face the fact that that life will more than likely not be nearly as long as I would choose. I doubt the necessity of reciting statistics to a group of informed persons such as exists on this panel but I do feel the need to tell you what goes through my mind constantly based on facts and statistics.

Having been informed eight years ago that I have the first obvious sign of a complication, retinopathy, I became scared and decided to become a more informed diabetic. Well I have become informed, alright, sometimes I wish I did not know as much as I do but if it helps in the long run by makin me take my diabetes seriously, it will be worth it. Aside from working closely with the local ADA affiliate, I sat through a full day of hearings before Senator Schweiker in Washington in February 1974 and heard all I need to hear to know that diabetes is not to be taken lightly, as too many people do take it. "Oh well, as long as you take your shot, there is no problem." Ha-ha, that's what I used to think and how many times have I heard that statement. Well I thank God for insulin (and Drs. Banting and Best of course) but I only wish the problem of complications could have been faced sooner and some more research done in that area over the years since insulin was discovered. Granted, it wasn't realized for a period of years after the discovery but it is quite obvious now that it is becoming an enormous problem with the ever increasing numbers of diabetics and I think it is time proper attention be paid to it by way of increasing the ridiculously small amount of money spent on research by our government. I have heard that President Ford's mother was diabetic--perhaps it would help our cause if President Ford were to inherit the disease. That is nasty and of course I don't mean it but I do hope we will be able to get increased funding for research.

One fact I cannot help being very aware of is that diabetes is the No. two cause of new blindness, and quickly becoming No. 1. For this reason and the fact that I have retinopathy, I live with a fear of blindness. I realize research is being done in this field but we need more.

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Neuropathic involvement is very often seen in the diabetic. I have only been slightly aware of this to date but it is one more thing that reminds me of the changes in my body due to diabetes and adds to the fear.

Five out of six amputations necessitated by gangrene are the result of diabetes. As time goes on and I see sores and cuts taking a very long time to heal, I must fear for this complication.

Diabetic nephropathy--the principal cause of death among juvenile diabetics. Because of this I pray each time the doctor takes my blood pressure and fear for the day that I might discover this common complication.

When I hear that three out of four strokes can be attributed to a diabetic condition, I live in fear.

I have already experienced the problems that can accompany pregnancy in a diabetic. I have been very fortunate to have delivered two healthy children. I should add they were far from healthy at birth and that I did not make it through one pregnancy. I am just thankful that the medical profession has come a long way in the delivery and care of children of the diabetic. That did not come without research.

And last but certainly not least, when I think of the fact that diabetes is the fifth leading cause of death by disease and probably higher up on the ladder considering that half the deaths reported as heart attacks are diabetes related, I live in fear.

You may have noticed an underlying theme in what I have related and that is, having been informed of the facts and statistics, I do not accept old age gracefully, I fear it. I have always been a very active person but as time goes on I notice the changes, such as circulation as I have mentioned, and I wonder how much longer I will be lucky and not have diabetes interfere with my life. I would like to be able to look forward to retirement years with my husband but we have never even discussed the subject and I'm sure you can understand why. I pray daily that I may live to enjoy my grandchildren and if I do that I have my eyesight to do so.

I may have come across as a rather dramatic, pessimistic martyr. I am not one to sit back and feel sorry for myself but these are my innermost thoughts as a diabetic and I have never really been able to openly express them in full to anyone but I do feel this is the time to do so and hope some good will come of it by way of research. I do not care if it involves taking six needles a day to stop the progression of circulatory problems, I will be very happy to do so.

I realize there are many areas that need improvement for the diabetic: i.e. patient and public education, job descrimination in some areas, insurance, detection but having worked in all of these areas, I must now be selfish and ask that your main concentration be on research. It may or may not help me at this point but diabetes being a hereditary disease, it may help someone else in my family.

(Mrs.) Barbara A. Cavanaugh
735 Wright Dr.
Maple Glen, Pa. 19002
(215) 643-3299

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Testimony Presented to the
National Commission on Diabetes
by: Mr. Ken Curtis

11 West South Ave.
Mount Holly, N.J. 08060

April 22, 1975

Mr. Wartofsky
Information Office NIAMDO
National Institute of Health 9A04
Bethesda, Maryland 20014

RE: Testifying - May 1st Diabetes Hearing

Dear Mr. Wartofsky:

I would like to testify at the Diabetes Hearings to be held in Philadelphia on May 1, 1975. I am the father of three (3) diabetic children. I understand that it is relatively rare to have three (3) diabetic children in a family.

First I want to assure the committee that Diabetes is not always hereditary (there is none in our family history). I then want to confine the balance of my testimony to the problems we, as parents of three diabetic children, face everyday. These include:

(1) Medical supplies needed for normal maintenance, as well as emergencies.

(2) Cost of these supplies.

(3) Knowledge parents must have of the disease and its control
   (a) routine testing
   (b) Interpreting test to balance the three main factors of control (diet, exercise and insulin)
   (c) Life threatening conditions that have resulted when we have misjudged or miscalculated one or more of these factors.

(4) Urge that money be channeled to Diabetic Research to find a cure; or, at the very least, a more effective method of control to ward off the serious long range effects of Diabetes.

I will confine my testimony to ten minutes.

Yours truly,

Ken Curtis

KEN CURTIS

Testimony Presented to the
National Commission on Diabetes
by: Mr. Michael J. Welsh

DIABETIC RETINOPATHY

1. Early Problems

   --school, reading

   --sports

2. Near Blindness

   --severe hemoraging

   --optomalogist's opinions

   --two years out of my life

   --Joslin & importance of research

   --Lasar treatment

3. Eyes, Today & Tomorrow

   --limitations
   work
   sports, any physical exercise

   --expectations for eye dependability in future

   --re-emphasize research

(10 minutes)

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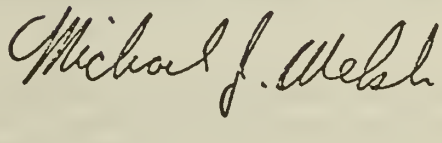
Michael J. Welsh



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Testimony Presented to the
National Commission on Diabetes
by: Ms. Jo Ellen Sax
Juvenile Diabetes Foundation

JO ELLEN SAX

I have been a juvenile diabetic for thirty years; therefore I can readily attest to the necessity of finding a cure for this horrible disease. I was diagnosed as a diabetic shortly before entering the first grade. I learned to read, to write, and to give myself insulin injections simultaneously.

For me to discuss the problems the disease helped to create for not only myself but also my family would be time-consuming, could be melodramatic if I chose and reptitious of other testimony. Thus, no purpose would be served by relating my personal story.

What I want to stress and what this Commission must fully understand when considering priorities is the debilitating nature of the disease. In many cases it disables it victims at their peak working years.

Employee productivity is a phrase often heard these days. Our country can retain its strength only if each citizen produces to the best of his or her ability. This can only be done if an individual is healthly.

The importance or rather the necessity of work was firmly entrenched in my mind at an early age. I was tall for my age, and at eleven I convinced a neighbor I was fourteen, and she hired me as a babysitter. That was my first job, and I have had many since. I earned a substantial portion of my college tuition usually working at two jobs simultaneously. After college I did meet with some job discrimination as a result of my diabetes; however, I did find suitable employment plus a second job to support me in a style to which I wanted to become accustomed. Working at a second job continued for many years.

During those years my diabetes did not go away. My hectic pace might have been detrimental to my health, but I would not allow myself the thought that the disease could deter me from working. Many times I would arrive at work in a condition in which my co-workers would admonish me for not being at home in bed. Everybody was entitled to sick leave - everybody but me.

I always felt, needlessly of course, if I were ill it would be a reflection of my inherent weakness because I was a diabetic. My attendance record during my school years and work years was far above average.

In September, 1971, I experienced my first serious complication as a result of the disease. I suffered a retinal hemmorhage in my left eye which almost totally osbcured the vision in that eye, but it did not interfere with my work although it did create quite an emotional upheaval in me. As time progressed signals of impending complications began to arise. I refused to acknowledge them.

In October, 1973, I was offered a position which paid me enough to permit me to resign my part-time teaching position. I was thrilled. In December, 1973, I suffered what was described as a neurological seziure. After a brief hospitalization I returned to work.

In January 1974 I had a more serious attack of the same thing and was also informed I had renal problems. My physician could not determine when or maybe even whether I would be able to return to work. I chose to deny the latter in any case. Since I was relatively new on my job, my employment was terminated. I received substantial severance pay and was certain within a short period of time I would be back at work.

In May, 1974 I suffered a severe cerebral vascular accident - stroke. My chances for survival for a few days were no better than fifty fifty; I won. However, my current health condition is precarious. With great difficulty I have accepted the realization that my working days are over. Although many days I awake in the morning feeling very strong, but after I begin one of my volunteer activities those symptoms begin to appear - muscle weakness as a result of diabetic neuropathy, edema reflecting the nephrotic syndrome and a general loss of stamina.

Now, let's look at the bottom line. Prior to my disability I was earning $18,000 a year. As a single person I was paying approximately $7,000 a year in taxes - that's $7,000 a year in lost revenues plus thousands of dollars I spent for goods and services which helped to create other jobs. Now I receive social security disability benefits which drains that system. Consider the cost alone - it's staggering. I personally know three other juvenile diabetics who are my peers - two are men blinded from the disease and suffering from severe cardiac conditions, the third is a young woman with renal failure who is being maintained by kidney dialysis. All three were white-collared workers earning and spending thousands of dollars a year. Their numbers may be multiplied thousands of times.

Something must be done now to stop this drain of manpower which will only continue as the incidence of juvenile diabetes increases.

A cure is the goal of the Juvenile Diabetes Foundation. Personally, alleviation of the complications would be satisfactory so that other Juvenile diabetics can remain productive persons throughout their lives. Who knows with enough effort and funds even I may be able to work at one job again.

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Juvenile Diabetes Foundation

Testimony Presented to the
National Commission on Diabetes
by: Ms. Connie Copeland

April 23, 1975

Mr. Victor Wartofsky
Information Officer
NIAMDD
National Institutes of Health
Room 9A04, Building 31
Bethesda, Maryland 20014

Dear Mr. Wartofsky:

Following is a detailed summary of the testimony to be given by Connie Copeland at the National Commission on Diabetes Public Hearings in Philadelphia on May 1st.

Mrs. Copeland will elaborate on certain points and go into greater detail of certain aspects, but this is the general testimony she will present.

The testimony will consist of three basic areas: Case History, Problem Areas and Personal Feelings and Opinions from Experience.

Testimony

My name is Connie Copeland. I was born in September of 1943 and I developed Diabetes Mellitus in February of 1949 (this is when the disease was discovered in myself). There was, at that time, no diabetes in my family.

As a child I was relatively problem-free. I had two hospitalizations, one for abscessed teeth which threw my diabetes out of control, and one for an acidotic condition which I would contribute to a family problem (the adjustment of my grandmother coming to live with us) which occurred at that time.

As a teenager I had one hospitalization for a strep infection. I finished high school and went on to complete nursing school.

I always had dental problems and numerous dental caries which had to be taken care of from childhood.

From onset until I was 22 I had been taking PZI. When I was 22 I was changed to lenti insulin and about that time I began having pancreatitis and ketoacidosis. This continued off and on for a year, perhaps once a month each time. Once during this time I was hospitalized, and it was never determined whether the pancreatitis caused the acidosis or vice versa.

It was also at this time that I had extensive dental surgery for a cyst that had formed on my upper jaw, and several teeth were removed as a result.

I was married when I was 23, and had difficulty becoming pregnant. After two years and no success in becoming pregnant, my husband and I were separated.

When I was 25, I began having symptoms of neuropathy. They were undefinable and resulted in exploratory back surgery, with no definite results. The neuropathy increased and retinopathy was found. Total blindness resulted in eleven months.

Great problems, both practical and emotional, were involved. Adjustments had to be made for daily living. I went for rehabilitation training to the Catholic Center for All the Blind in Newton, Massachusetts. The program was superior. At the end of my training I remained in Massachusetts and sought employment again in my profession of nursing. I also went to the Seeing Eye Institute where I trained with a seeing eye dog who has been with me since that time.

At about the time I was receiving rehabilitation training in Massachusetts, it happened that my husband was also in New England. We made an attempt at reconciliation, but after a while we separated again.

After my rehabilitation training I sought employment, and after four months was successful in securing a position as a registered nurse. I worked for two years as head nurse on a ward for retarded children. While there I had a minor bladder infection, a cystitis. A few months after that a very severe kidney infection set in which has been attributed to the diabetes, and resulting in permanent kidney damage and a sluggish bladder, leaving me with only 35% kidney function. I was forced to leave my nursing position, since I no longer possessed the stamina required by the job.

I returned to Philadelphia, whereupon I was hospitalized for the same kidney infection. At this time it was discovered that I had become pregnant during the time of my attempted reconciliation with my husband. I was advised that the pregnancy be terminated at that point, due to the complications of diabetes I was experiencing, namely neuropathy, retinopathy and nephropathy. A therapeutic abortion and tubal litigation were performed.

I did not return to work as such, but did volunteer work in Norristown. I also began psychological therapy, with which I am continuing. During the past two years in therapy, my physical condition has improved, although the kidney damage remains. My blood results and elimination are fairly normal..

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Juvenile Diabetes Foundation

At present I am taking the following medications:

36 units of NPH once a day.
100 mg. of Macrodantin twice a day for kidneys.
Percodan and Benadryl for the pain of the neuropathy.
A multi-vitamin twice a day.

Two years ago, my sister's child who was then 13, developed diabetes. During the time of the onset of most of my complications I had been living with them, and now the girl does not wish to see me. Having seen what I went through and am still going through, she does not want to look at me and see the possibility of that which she may have to go through herself. This is a hardship for me.

My first concern is that a cure be found for diabetes. I realize that it is rather late for me, the only hope being that further complications can be arrested. But the most effort and money should be directed into research for a cure for diabetes.

In addition, an awareness of the problems stemming from Juvenile Diabetes should be made much more widely and readily known.

Greater emphasis on the total scope of diabetes should be stressed in medical and nursing schools.

Juvenile Diabetes is really a family disease because of the problems it creates. Greater information should be available regarding the emotional aspects of the disease, how they affect the family and the diabetic in coping with the emotional stability of all involved. It is my feeling that this plays a definite part in the control and complications of the disease.

I think mine is the first generation to survive long enough to suffer all the complications of diabetes. When I think of all the Juvenile Diabetics who will have to experience these complications, the picture is tragic. Which brings me back to the fact that although treatment for the complications cannot be overlooked or underestimated, the primary concern is to find a cure. And this cannot be accomplished without funds to the researchers who are devoting themselves to just that end.

Sincerely,

(Mrs.) Cynthia Fital
Secretary to Lee Ducat

TESTIMONY

Testimony Presented to the
National Commission on Diabetes
by: Ms. Rita Castro

Ladies and Gentlemen:

I am here today to tell you the story of a little boy named Steve. Steve is age 11, bright, inquisitive, loved by his parents and brother and sister, a football player and Little Leaguer, with ambitions of one day wanting to grow up and be a garbage collector and the next day wanting to be the President of the U. S. when he grows up -- but resemblance to any other normal 11 year old little boy ends there.

You see twice a day, whether he is sick or well, Steve takes a syringe fills it with a foreign substance and tries to find a spot on his arms or legs that hasn't already atrophied or caved in and sticks himself with this needle. Steve also gets up early every day of his young life and tests his urine for sugar, which he will do three or more times that day. He, also, concerns himself with whether he will be embarassed in front of his classmates that day by suddenly crying in the middle of class unaware that he is doing so or by passing out in the lunchroom or playground because his blood sugar has dropped below normal and he is having an insulin reaction. He also knows that he may never leave the house without carrying some sort of sugar in his pocket to ward off severe insulin reactions, if he should have one, or have a buddy or brother with him. He knows that even though he is the starting pitcher of his Little League team, he cannot be there on time if a game is being held at 5:00 P. M., since he must first eat a full dinner before he can be a little boy. He is aware of the times he has awaken in the middle of the night frightened and concerned that his parents are quite upset because he has just suffered a severe convulsion in his sleep and his parents had to give him an emergency shot of glucagon which they always keep on hand if this should happen. He worries about another trip to the hospital if the shot of glucagon doesn't pull him out of shock this time. He feels badly that his parents can never leave him alone because of the special care he needs. He also knows the expense of his care -- insulin syringes, insulin, glucagon, doctor visits, etc. He sees the look of pain on his brother's face when it is his turn to give him a shot because everyone in a juvenile diabetic's immediate family must be able to know how to care for him.

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Steve you see is an 11 year old juvenile diabetic and has been one since the age of 7. He knows that diabetes is the leading cause of blindness, a leading cause of heart disease and vascular complications, a leading factor in kidney disease, a condition that shortens his normal life span by one-third, in spite of present methods of control, which include restricted diet, careful monitoring of exercise, no treats which most children take for granted and two insulin shots a day to survive. He knows that insulin is merely a control, not a cure, and it buys time until the complications take over. He knows that diabetes is not a disease of old age as many people wrongly believe but it is a disease that affects over one million children in its severest form. He, also knows, that when he asks his grief-stricken parents, "If I take very good care of myself and do all the things I am told I should, will I not go blind or suffer one of the complications?" that his parents cannot answer "Yes". What he may not be aware of at the age of 11 is the fear of the future that his loved ones fear for him if a cure is not found soon.

Ladies and Gentlemen, I am Steve's mother. We all have the luxury of believing we will live a normal life. Every healthy human being has the luxury of looking forward to tomorrow but, at this time, unless we support research to find a cure for the oldest disease known to mankind - Diabetes -- we know what tomorrow will bring to a juvenile diabetic. Please give my son, and other children like him, the luxury of believing there is a tomorrow by supporting research to find a cure for diabetes.

Thank you on behalf of Steve and his grief-stricken parents.

Testimony Presented to the
National Commission on Diabetes
by: Mrs. Edith Millman

Mr. Victor Wartofsky
Information Officer NIAMD
National Institute of Health
Bethesda, Maryland, 20014

Dear Sir:

I am the mother of an 18 year old diabetic who developed diabetes when he was only 13 months old. He is a wonderful teenager, an excellent student who won several awards for his science projects. Unfortunately, now, just before entering college, he is beginning to show signs of diabetic complications, especially diabetic retinopathy.

Throughout the years that we lived with his condition we were appalled by the tremendous amount of confusion and misinformation among the doctors and almost diametrically opposed opinions as to management of this disease. There seems to be a tremendous lack of understanding among doctors and nurses and a tragic indifference to research and latest research findings.

As a free lance abstractor of foreign biomedical journals, I.came across several articles on calcium dobesilate as a treatment for diabetic retinopathy. The first reports on it were published in 1969. None of the ophthalmologists and internists whom I approached showed any interest to learn more about it or to initiate a clinical study. We went to Lausanne Switzerland in July 1974, where at an ophthalmological clinic my son's eyes were thoroughly examined on 2 successive days. In addition to fluorescein angiography, determination of capillary fragility and refraction, his blood glucose, fatty acids and growth hormone level were also determined. All this for a grand total of $33.- (=100 Swiss Franks). Calcium dobesilate was prescribed; we could purchase the drug without prescription in Germany, Switzerland and France. I understand that there are 2 studies with this compound in progress in the U.S.; one in San Francisco, the other in St. Louis, Mo. but it will be years before this drug will be available here. I don't know if calcium dobesilate will work for my son but I feel that several precious years of testing have been wasted because of a lack of coordinated research efforts in this field.

Sincerely,

Edith Millman

(Mrs.) Edith Millman

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Testimony Presented to the
National Commission on Diabetes
by: Ms. Suzanne M. Peterson

Victor Wartoffsky
NIAMDD; Building 31
Room 9A03
Bethesda, MD 20014

April 24, 1975

Dear Sir:

I am 21 years old. I work as a secretary/receptionist five days a week and teach a Junior high class at my church on Sundays. I'm also secretary for the Campus and Career youth group at church. I also speak whenever possible to Lions, Rotary and Kiwanis Clubs. -Why do I speak?

Because for almost 17 of my 21 years I have been diabetic. My 28 year old brother has been diabetic for 17 years too.

It is heartbreaking for me to realize that funds are not going towards research for a cure - only because people are unaware of the importance of finding a cure for diabetis.

Why should we find a cure? Because insulin is not a cure as was thought 50 years ago. As a diabetic, the things I have to look forward to in life include possible blindness, loss of an extremity kidney trouble, and/or heart disease. It's so depressing. I'm only 21 years old. And, unless we find a cure those are some of the things I may eventually face.

Have you ever been on a diet? Have you ever cheated on that diet? That is a life time situation for all diabetics! We must adhere to a strict diet every day, seven days a week . . . for life! Perhaps if I didn't get hungry between meals, perhaps if cake and candy were not served at parties, perhaps if I didn't have to watch everything I eat, everything I do, perhaps it would be different - but it's not! And it will be the same for thousands of diabetics until we find a cure.

Another heartwrenching problem I've run into is job descrimination. I love to work and I always do the very best I can. I've attended business school and have experience. This past September I applied to a local plant for a secretarial position. I filled out the job application and included on it the fact that I was a diabetic. I passed all the tests and interviews and I was finally hired! Boy, was I ever excited! The following Monday I started my first day of work - only to find out after a routine physical that I could not work there. The reason - DIABETIS! I can't tell you how it broke my heart to hear that. I've always done what other "normal" kids have done - and often even more. This came as a shock to me to say the least.

I pray for a cure, <u>now</u>. For myself and thousands of others. Will <u>you</u> help my prayers come true by seeing that funds for research are granted?

With <u>much</u> hope,
Suzanne M. Peterson

Suzanne M. Peterson
1307 Harris Rd.
Dresher, Pa. 19025
1-215-646-1130

Testimony Presented to the
National Commission on Diabetes
by: Ms. Patricia Leapley

Good Afternoon!

I am Patricia Murray Leapley R.D. I am a member of the Board of Directors and Vice Chairman of the Patient Education and Counseling Committee, American Diabetes Association, Washington, D.C. Area Affiliate, and a member of the Executive Board of the Washington D.C. Dietetic Association where I function as liaison to the D.C. Diabetes Association and serve as Chairman of the Diabetes Committee.

I would like to state that my comments reflect my own thoughts.

May I shed some light on the role of the ADA diets" and Meal Planning with Exchange lists as they relate to the treatment of the thin, normal and obese diabetic patients?

Although I was not a clinical dietitian when "ADA diets" were developed, I used them often, after I received my R.D., to communicate balanced daily dietary management to the patient.

The "ADA diets" were developed to standardize diet ordering procedures for the physician in the hospital so that he or she could communicate, within minutes, the patient's diet order to the nurse who in turn communicated the diet order to the dietitian and as a result the patient received the appropriate tray of food at meal time.

Prior to this standardization, the dietitian often had to locate the physician not so much for the calorie content, but for the distribution of carbohydrate, protien and fat and the number of feedings per day. Sometimes the physician was busy and could not be located.

Let me take a minute to explain "ADA diets." The term "ADA diet" means that specific caloric amounts are established along with specific amounts in grams of carbohydrate, protein and fat. Each caloric level is assigned a number 1, 2, 3 etc. so that communication between the physician, nurse and dietitian is simple and efficient. The physician has the option, as leader of the medical team, to adjust the "ADA diet" to meet the needs of the individual patient, i.e., grams of fat might be decreased and type of fat (animal or vegetable) specified, a sodium restriction might be prescribed, if necessary.

The booklet "Meal Planning with Exchange Lists" 1950, revised 1956, is the product of Committees from the American Diabetes Association, Inc. and the American Dietetic Association in cooperation with Chronic Disease Program - Public Health Service Department of Health, Education and Welfare. The booklet serves as a "tool" for transmitting the "ADA diet" order into a balanced and nutritious daily meal plan that meets the needs of the individual patient in the hospital and at home.

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The "Exchange Lists" were also developed to be used as a basis for educating the thin, normal and obese diabetic so that he or she could prepare a daily meal plan that would meet the patient's nutritional requirements for carbohydrate, protein, fat, vitamins, minerals - the latter two are vitally important in order to complete the digestion, metabolism and absorption cycle in the patient's body.

To detract for a minute, let me interject some "Food for Thought." Have any of you, as researchers, pondered the fact that "The Cure" might be related to the availability or non-availability of specific vitamins and fiber found only in unrefined wheat? These vitamins and insulin are known to play a vital role in the metabolic process in order for glucose to be transported to the blood stream where it is absorbed and utilized by the cells.

In summary, the "ADA diets," with or without modifications from the physician, and the booklet "Meal Planning with Exchange Lists" serve as the standard and basic tool that is currently available for communicating good nutrition information to the thin, normal and obese diabetic patient.

The "standard" exchange list is sound but needs to be expanded to include more exchanges within the lists. The means of communicating the standard (exchange lists) to the diabetic patient leaves much to be desired. Our present booklet contains much "print" but few pictures for the non-reader. What about the blind who read via braille and the non-English speaking diabetics.

Will you, "The Commission", request that funds be allocated to develop new and improved nutrition education materials that will meet the needs of the infant, juvenile, adolescent, pregnant, blind, middle aged, and geriatric diabetic reader and non-reader on well and sick days?

If and when material is developed, we must find a way to store, share and distribute the nutrition education material with dietitians and other members of the medical team and most importantly with the patients and their families who desperately need and must know where to get and how to use factual nutrition information in and out of the hospital.

Although the Commission does not include a dietitian, I hope you will include both hospital and community registered dietitians in your work groups.

I have faith in you as a Commission. I know each and everyone of you have a strong desire to improve the nutritional care of "all age" diabetics.

Please allocate some funds to improve the dietitians means of communicating the "ADA diets" to patients, families and members of the medical team.

Thank you.

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Testimony Presented to the
National Commission on Diabetes
by: Dr. Arthur E. Helfand
Pennsylvania College of
Podiatric Medicine

PENNSYLVANIA COLLEGE OF PODIATRIC MEDICINE
RACE AT EIGHTH STREET • PHILADELPHIA, PA. 19107 • 215-629-0300

Arthur E. Helfand, D.P.M., F.A.C.F.O.
Professor and Chairman
Department of Community Health

April 25, 1975

Mr. Victor Wartofsky
Information Officer
NIAMDD
National Institutes of Health
Building 31 - Room 9A04
Bethesda, Maryland 20014

Dear Mr. Wartofsky:

I am pleased to present this brief statement on the need to include foot health education and podiatric care as part of any discussion on the scope and impact of diabetes mellitus.

At the present time, I am Professor and Chairman of the Department of Community Health at the Pennsylvania College of Podiatric Medicine and hold hospital appointments at St. Luke's and Children's Medical Center, Thomas Jefferson University Hospital and the Philadelphia Veterans Administration Hospital. I also serve as consultant to Temple University's Woodhaven Program and Elwyn Institute. I am the immediate past chairman of the Podiatric Health Section of the American Public Health Association and the immediate past chairman of the Council on Podiatric Education of the American Podiatry Association.

In the brief period allotted to me I would like to address the following issues:

1. The need which exists for improved preventive foot health services within community diabetes health programs.

2. The important role podiatrists do and should continue to play in responding to community health needs for diabetic patients.

3. The prevailing gaps which must be overcome if we are to make preventive health care services a reality for all citizens.

Today podiatric activities in the field of diabetes span a great many areas of concern. While maintaining a traditional base in the area of primary care and education, much effort is now being directed towards prevention as an area of primary concern.

Foot conditions are so nearly universal in the diabetic that education and prevention offers the only true hope to significantly reduce the prevalence of disability and deformity in the diabetic. It is well recognized that the primary prevention of diabetes mellitus is today not factual. It is also recognized, that secondary prevention, i.e., finding the disease at its earliest onset prior to the onset of symptoms and over abnormalities; and tertiary prevention, i.e., minimizing the existing effects of the disease proved the only practical approach to the total management of the diabetic patient. Some years ago, the U.S. Public Health Service supported a study at St. Luke's and Children's Medical Center in Philadelphia in diabetes screening, and the results demonstrated that a significant percentage of patients with foot complaints may represent potential diabetics. An insubsequent study supported by the U.S. Public Health Service and the Commonwealth of Pennsylvania in conjunction with the Philadelphia Department of Public Health and the South Mountain Restoration Center demonstrated that perhaps as many as 13% of the elderly patients examined with foot problems proved to be diabetic. The foot thus may be considered as a mirror of health and the U.S. Public Health Service has subsequently seen fit to release two publications. one entitled, "Foot Care for Diabetics" and the other. "Feet First."

In addition, in the elderly or otherwise disabled, the ability to ambulate may be the difference between institutionalization and productivity. Scientific measures to provide primary prevention of foot disease in their early stages continue to develop, and secondary and tertiary prevention offer future directions in podiatric medicine in concert with today's comprehensive health programs.

Prevention - Educational efforts directed towards other health professions and the public are an integral part of the activity of the podiatric profession. For example. inadequate foot health education for a diabetes program can significantly change the lives of patients, their families, and the professionals providing care. They have a great impact on the social elements of a community. A person uninformed about a simple problem can become a ward of society by not seeking treatment in a team approach. Efforts

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must be directed towards the improvement of existing health educational programs to encompass the needs of the young. Only through such a change will the elderly of tomorrow be protected from developing the foot problems of today. Prevention and preventive health education, therefore, must begin in childhood.

Health programs should emphasize podiatric prevention and should include the provision of therapeutic services to individuals and special groups. The medically indigent, the mentally disadvantaged and the chronically ill are examples of these groups.

Mr. Chairman, members of the Committee, I want you to know that, given podiatry's nearly seven years of experience in Medicare, we are committed to the proposition that the next generation of older people not be subjected to the high prevalence of foot pathology podiatrists are now required to treat. But we are very much aware that this won't happen by chance. A much improved program of preventive foot health services must be planned for and implemented at all levels if success is to be realized. And though many factors must be considered in this mission, several take on special significance at this time. Among them are included:

- A high priority must first be given to recruiting doctors of podiatric medicine into the public health field. Though a foundation has been laid, we must build further in this regard if future manpower requirements in community podiatry are to be achieved.

- Equally important is the need to expand improved awareness and appreciation for preventive foot health services within operating public health departments and agencies. This task, as well as the one preceding it, is a primary one whose needed effect will not be felt in the immediate future. But each is a needed long-term objective for which the Podiatric Health Section dedicates its very existence.

  I remind you that the American Public Health Association did adopt a resolution on foot health as public policy last year.

More immediately, however, there are several factors which deserve attention at the present time and which can aid significantly in the fulfillment of our mutual objectives. These items include:

1. The inclusion of podiatric services as part of any health care program relating to diabetes mellitus.

2. The need to increase manpower and awareness in podiatric education to meet the demand for foot care services.

3. The need to insure all diabetics an equal opportunity to develop a lengthy and meaningful life.

Mr. Chairman, the podiatric profession, whose membership I represent here today, is committed to the proposition that comprehensive health care is an inalienable right to be enjoyed by all Americans. This will not happen, however, until preventive health care services, including preventive foot care, have taken their rightful place within the mainstream of our Nation's health care systems. We are hopeful that, in cooperation with this important committee, we might do all within our power to hasten the attainment of this objective.

Respectfully submitted,

Arthur E. Helfand, D. P. M.

AEH:mjw
c. c. National Commission on Diabetes

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NATIONAL COMMISSION ON DIABETES

Sheraton Inn
Los Angeles International Airport
Los Angeles, California
May 8, 1975

Public Hearing Number Three

Thursday, May 8, 1975

Public Testimony,
Statement Included

Dr. Mark A. Sperling
Ms. Flora Mason
Ms. Diana W. Guthrie
Dr. Virgil Hanson
Dr. Edward Arquilla
Dr. Lowell Sparks
Dr. Rachmiel Levine,
Statement Representing:
Edward Arquilla, M.D.
Sue Bradley, R.N.
Glenn Braunstein, M.D.
Charles Brinegar
Josiah Brown, M.D.
Mayor B. Davidson, M.D.
William Grishaw, M.D.
Sherman M. Holvey, M.D.
Maurice D. Kogut, M.D.
Robert L. Kroc, Ph.D.
Rachmiel Levine, M.D.
Donald E. McMillum, M.D.
Leona V. Miller, M.D.
Herbert Pearlson
Russell Poucher, M.D.
Bruce Ramier
Lowell Sparks, M.D.
Mark Sperling, M.D.
Irving L. Spratt, M.D.
Robert Tranquada
Williard P. Vanderlaane, M.D.
William Wishner, M.D.
Alice N. Bessman, M.D.

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National Commission on Diabetes		Los Angeles, Calif.
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Statement Submitted without Personal Testimonies	Mr. James B. Cobb Dr. John A. Galloway	

Testimony Presented to the
National Commission on Diabetes
by: Dr. Mark Sperling
Harbor Central Hospital

Ladies and Gentleman of the Commission.

I have been asked to convey to you on behalf of the Society for Pediatric Research, the Lawson Wilkins Pediatric Endocrine Society, physicians in the Los Angeles area concerned with research, education and patient care of children with diabetes mellitus, and in a sense, the children with juvenile diabetes and their parents, the critical needs for a concerted and integrated effort on a national and regional level in the field of diabetes mellitus in childhood.

The scope of the national problem has been repeatedly emphasized to you, and needs no further emphasis from me. In our own regional area the magnitude of the problem, based on conservative population estimates involves some 4000 children and their parents, of whom less than 50% have access to first class education and care. The uniqueness of the problem lies with the fact that we are dealing with children whose problems offer challenges not usually encountered in adults. We educate children and their parents and we are cognizant of the impact of the disease on disruption of family life, on the psychological trauma and frequent maladjustments of the children, their denial and rebellion at accepting the diagnosis, the havoc which this denial wreaks on the child's parents or physician's ability to maintain metabolic control, and of the rejection by friends, occasional teachers, employers and other individuals of the diabetic child as a normal equal. Perhaps the children are correct and have insights which they fear to express. Perhaps they read and know of the risks of complications involving the small blood vessels of the eyes and kidneys, the large vessels, and the nervous system after 20 or so years of diabetes.

The implications for a 5-15 year old are evident to the physician; they may be evident to the patient. There are additional hazards for the diabetic

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girl who marries and becomes pregnant. The pregnancy affects metabolic control while the fetus and the infant of the diabetic mother are subject to risk and complications of an increased incidence of malformation, stillbirth, prematurity, and severe hypoglycemia.

If we include infants of mothers who have diabetes only during pregnancy, that is gestational diabetes, the magnitude of the problem increases several fold. Pediatricians deal frequently and constantly with these problems without accurate knowledge of the basis for malformation, stillbirth, and without a sound scientific basis for modifying the neonatal course. And for the parents and affected children we do not have accurate data on the genetics of the disease, its etiology, epidemiology, relation to viral infections, relation of control to complications, and of co-ordinated educational facilities to implement fully what we already know. Moreover, we are as physicians, under the current climate, discouraged from attempting new modes of therapy in the child, or of prediction of those who may be at risk for developing diabetes by nature of close blood relation to established diabetics, because of concerns with the concept of informed consent.

Clearly we need more research in its broadest context.

Research into the basic mechanisms controlling insulin secretion and action.

Research into the ontogenesis maturation and ageing of normal mechanisims controlling carbohydrate metabolism.

Research into the epidemiology, relation to virus infections, genetics and prediction of the disease.

Research in childhood of newer modes of therapy which may alter the relentless development of complications, and the mechanisms of these complications.

Research into the scope and impact of the disease.

Research into the quality of existing care in the community and the means to educate and to disseminate modern concepts throughout the community of physicians, nurses, dietitians, parents and patients.

The pediatrician can and does play a vital role in each of these areas; he is in a unique position to see the evolution of the disease, to study its impact, to study its genetics, to ascertain the role of viruses since these occur in childhood years, and to study means of modifying the disease in the laboratory, clinical setting and community setting. We do not ask for separate consideration, but only that our needs and contribution be viewed as an integral component in the overall scope of the problem of diabetes.

In Los Angeles area at least 4 academic institutions conduct research education, and patient care specifically in childhood diabetes. Our efforts in all these areas would be better met by a coordinated center. And by virtue of numbers of patients we could contribute significantly to national coordinated data gathering or research protocols. In addition, the diversity of the population could provide insights into the genetics of the disease not readily available in other locales. We urge you to consider the needs of the nation, our regional needs, and the unique contribution of the pediatrician in the national effort to combat the scourge of diabetes through research.

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Testimony Presented to the
National Commission on Diabetes
by: Ms. Flora Mason

Thank you for allowing me, as a member of the JUVENILE DIABETES FOUNDATION, and a parent of a young diabetic, to speak to this Commission.

I would like to say it is a pleasure to be here, but it isn't. I would much rather not have to be concerned with diabetes, not have to be concerned with the implications of its diagnosis, not have to be concerned over funds for research. Would that insulin had "cured" the disease and we were all expending our energies in other directions! But insulin is not a cure; it is a treatment, a prolonger of lives that would have been ended one year or two years after diabetes struck, and for this we are very grateful to insulin.

Because these diabetic lives have been prolonged, however, we as a people and as a nation, are faced with the dire problems of the advanced stages of this disease. Our government, through the efforts of many dedicated and enlightened people, has taken the first steps toward understanding and conquering diabetes by allocating funds specifically for this disease through the Diabetes Mellitus Research & Education Act.

This National Commission on Diabetes has been charged with the task of formulating long-range plans to combat diabetes. Your recommendations for the mobilization of national resources in the war against diabetes are of vital importance to us as parents of diabetics.

We well know the importance of treatment centers and educational activities. We have all benefitted in some way from improved treatment of diabetes and the educational materials which help us to live with this disease. But in our minds - & hearts - these are all stop-gap measures --- They do not touch the core of our major worry: the many and severe complications that follow years of "living with" diabetes.

We talk about supporting research and we as the Juvenile Diabetes Foundation have always sought as our major objective to stimulate funds for research so that we may find the cause and the cure for diabetes. The basic research most important to us is tied to treatment and educational centers -- a researcher cannot work in a vacuum -- he must know and consider the human aspect of those very people he is trying to help. A coordination of these areas is desirable in our view. But we cannot stress enough our top priority --- continuing and new fundamental research projects.

Our group has funded hundreds of thousands of dollars for diabetic research since 1971, but our efforts alone will not and cannot be enough to bring a breakthrough in a short time. We need help and a massive infusion of federal aid on a systematic and continuing basis.

Item 2, under sub-section (e) of the Diabetes Act states clearly what we strongly urge is the very major priority of federal research. It calls for "studies and research into the basic biological processes and mechanisms involved

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in the underlying normal and abnormal phenomena associated with diabetes mellitus, including abnormalities of the skin, cardiovascular system, kidneys, eyes and nervous system, and evaluation of influences of other endocrine hormones on the etiology, treatment and complications of diabetes mellitus".

If I may for a moment, go back to review the current status of the treatment of diabetes so perhaps you will realize the urgency we feel.

A diabetic is treated with insulin, proper diet, and exercise to achieve "good control" of his disease. This "good control" keeps the blood sugar levels down, but not normal and still allows for sudden rises in sugar after eating. This "good control" does not completely prevent the complications and consequences of being diabetic. Over 12 million diabetics in this country alone, one million of whom are insulin-dependent or juvenile diabetics, face shortened life spans and complications so severe that the quality of their lives is drastically affected.

Diabetes is now considered the fifth cause of death in the United States and in some circles this is often raised to third because of the disease's contributory effects in deaths reported as caused by heart disease, hypertension, vascular disease, kidney failure and others.

The most serious complications of diabetes are the premature development of hardening of the arteries and the seeming relentless deterioration of small blood vessels throughout the body. The hardening of the arteries leads to a

greatly increased risk of suffering a heart attack or stroke or of losing circulation in the legs. The deterioration of small blood vessels may affect the retina of the eye, causing blindness, or interfere with the functioning of the kidneys, leading ultimately to kidney failure, or cause damage to the skin, nerves, muscles and other organs.

The persistence of such complications despite the use of insulin in diabetics has led researchers to believe that some biochemical disorder other than insulin is ultimately responsible for the symptoms of the disease. The complications can occur in any diabetic, even those with a mild form, but they tend to occur most rapidly and severely in the juvenile diabetic.

Before insulin, the insulin-dependent or juvenile diabetic had a life expectancy of only four or five years after onset of the disease. Even now with treatment methods ranging from dietary control to drugs that give the pancreas a "kick" to insulin injections, the life expectancy of the diabetic is reduced by one-third, according to Dr. Richard Field of the Retina Foundation of Boston.

Today there are 155,000 diabetics who cannot see well enough to work. The Harvard School of Public Health projects 573,000 diabetic blind by the year 2000. In 27 years diabetic blindness will exceed all other causes of blindness put together.

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Most diabetic blind cannot be taught braille. Neuropathy, diabetes attacking the nerves, makes the sense of touch negligible.

The National Eye Institute reported 15 to 20 percent of all new blindness is caused by diabetes.

It has been said that "if we find the answers to the mysteries of diabetes, we will automatically make great strides in other areas such as heart disease, blindness, hypertension, stroke, arteriosclerosis, neurological problems, kidney disease, and on the whole problem of aging because diabetes is a disease of premature aging". We would like to emphasize the fact that research in diabetes will probably effect breakthroughs in many other major areas of concern.

I know you may have heard these statistics before. They are very grim, but even grimmer is the human equation linked to these statistics. I come before you as a mother of a diabetic child; she has had the disease seven of her fourteen years of life and as I look at her, I think of her future and her potential has a cloud over it --- the cloud of uncertainty and tragedy linked to her disease. She doesn't say anything to me about it, she doesn't want to upset me (as I do not want to upset her), but she has told her best friend she knows she will go blind. She really doesn't "know", but her awareness of her disease has led her to this fatalism. At fourteen years of age. She is only one of millions waiting and praying for a better future. Their numbers grow by the day. Our pediatrician sees more new diabetics than he does appendicitis cases and other so-called common ailments.

Other young faces flash before me here. In our small area of Nevada I have come to know many juvenile diabetics. I think of the young man bringing his new bride to a talk on diabetic retinopathy. He wants her to understand the disease. He has had some hemorrhages in his retina -- it is a matter of time for him. I think of the darling baby of thirteen months -- a new diabetic. She'll be a young girl in college and already a "vintage diabetic", a prime candidate for complications.

We parents of diabetics cannot wait and do nothing for our children. They are our children now and forevermore and whatever happens to them now or ten years from now or twenty years from now is our most immediate concern.

Diabetics and their families are doing what they can to support research, but it behooves this Commission to recommend to the federal government, now that diabetes funds have been allocated, to use those funds in such a way as to discover the causes of and to provide a cure for this disease whose ravaging effects continue unabated at this time.

Please hear us, help us now. Each day of delay brings tragedy closer to some bright young life.

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DEPT. OF PEDIATRICS
WICHITA STATE BRANCH

Testimony Presented to the
National Commission on Diabetes
by: Ms. Diana W. Guthrie

April 29, 1975

Mr. Victor Wartofsky
Information Officer
NIAMDD
National Institutes of Health
Building 31, Room 9A04
Bethesda, Maryland 20014

RE: Presentation for the Public Hearings of the National Committee on Diabetes, May 8, 1975, Los Angeles

Dear Mr. Wartofsky:

The undersigned constitutes an ad hoc committee convened by the Kansas Regional Medical Program and the American Diabetes Association, Kansas Affiliate, to study problems of diabetics in Kansas and to develop a plan for diabetes care and education in the State of Kansas. The committee was initially composed of members from the ADAK, KRMP, University of Kansas School of Medicine, and the Wichita State University Branch of the University of Kansas School of Medicine. The committee has been gradually expanded in the past few months to include representatives of the private section of medicine, nursing and dietary. Others will be added as plans develop.

Kansas, with a population of nearly 2.3 million, will have a population of about 150,000 known, unknown and potential diabetics. The state has some difficult problems with its vast areas to the west. These agricultural areas have a sparse population but an even more sparse physician population. Medical care services are sparse and fragmented. Quality care of diabetics is likewise deficient and fragmented. Consequently one of the planning agencies of the state (KRMP) and the ADAK felt the need to begin the planning process to upgrade and consolidate the services for diabetics. The committee has been meeting intermittently for about one year. Time has been spent surveying the scope of the problems and constituting the committee. We have also begun surveying other agencies as to their perception of the diabetic's problem, their involvement with diabetics, and their desire to become involved in the planning process.

It is the intention of this ad hoc committee to: 1) survey the scope and extent of the diabetic's problems in the State of Kansas, both as to epidemiology and needs; 2) enlist the support of other agencies (State Health Department, State Medical, Nursing and Dietary services, etc.) in the planning process; 3) seek official status for the planning effort; 4) develop a statewide plan for the education and care of diabetics; and 5) seek funding for implementation of this plan.

The state is fortunate in having one medical school for support of programs for diabetics. Well-qualified health care teams are already in place in the school for the care of diabetic patients. These teams are now providing quality diabetic care, are conducting educational programs for diabetics and health care professionals, and are conducting research in diabetes. These centers are in a position to become organizational focuses for diabetic programs in the state. From these tertiary care centers of patient care, education and research can go the expertise to organize secondary centers for patient care and education in areas where medical expertise is present for such programs and primary care areas as satellites of the secondary and tertiary care areas. Mobile teams may be available from the two tertiary care centers to facilitate care and education of patients and professionals in the satellite units.

The above plan is presented not as an accomplished fact or even a planned model but as a possible model based upon our assessment as a committee of the needs of our area. The work of this committee will entail the planning and refinement of these plans. Some models exist in the state and region for such plans, however. Two of the members of the committee were previously engaged in an RMP-sponsored program of mobile clinics in a neighboring state prior to coming to Kansas. Other groups (kidney, arthritis, etc.) are currently developing similar regional plans and the committee will draw upon their experience in planning. A regionalized care plan for perinatal problems is now in operation. This program, which has received excellent support from organized medicine, the public, and government, involves the designation of two tertiary care centers, secondary care centers and primary care nurseries. There has then been established a statewide transport system to serve these centers and transport pregnant women or ill infants to the secondary or tertiary care centers.

In addition, the University of Kansas School of Medicine, and its Branch in Wichita, the State Medical Society, and the State Legislature are working on a plan for regionalized care for all problems dividing the state into secondary care areas all focusing on two tertiary care areas in Kansas City and Wichita.

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We are not here presenting these plans as a finished product but to indicate to the Commission that statewide planning for medical care is under way in our state and that statewide planning for diabetes is also occurring. The Kansas Regional Medical Program has made some limited funds available to begin this planning process which we believe may lead to marked improvement in the quality of life of the diabetics of our state. We envision a statewide diabetes center with research capabilities and student (medical, nursing, dietary, allied health students, and residents) education, in addition to patient care and education in the secondary care centers with continuous professional education there, and patient care capability in the satellite centers. Such programs will, we feel sure, enhance the quality and quantity of life of diabetics and may serve as a model for reducing morbidity and mortality of their disease. We are not at present locked in a specific plan but intend during the planning phase to brainstorm and innovate new programs based upon the specific and unique needs of our state and region. We wish to record for the National Commission on Diabetes our desire to be of any help to them and to advise them of our deliberations and plans and to request of the Commission that, although we are a small state compared to New York or California, we nonetheless represent 2.3 million people whose needs on a personal basis are no different than those of more populated areas. We ask your consideration of those plans in your national planning effort.

Sincerely,

Diana W. Guthrie

Diana W. Guthrie, R.N., M.S.P.H.,
F.A.A.N.
Diabetes Nurse Consultant

DWG:sj

April 23, 1975

1. Kansas University School of Medicine
2. University of Kansas Medical Center, Kansas City, Kansas
3. Wichita State University of Health Related Professions
4. Dietitic Association
5. Kansas Medical Society
6. Kansas State Nurses Association
7. Kansas Department of Health and Environment
8. Kansas Hospital Association
9. Kansas Regional Medical Program
10. Officers from Local Diabetes Association

    Pat Silvestri - Director of Health Services, Fort Hays State College, Hays, Kansas
    Maxine Davis - Salina, Kansas
    Doug Ludwig - Sadan, Kansas
    Walter Holmes - Topeka, Kansas
11. Representatives of Sub-Geographic Regions of Kansas-Special Group

    Nancy Klostermeyer, M.P.H., Director of Continuing Education for Health, Marymount College, Salina, Kansas
    Eileen Keller, M.P., A.S.C.P., Director of Southeast Kansas, HS-EA Kansas State College, Pittsburg, Kansas
    John Moore - Health Services Education Activities Project, Washburn University, Topeka, Kansas
    Phyllis Vega, R.N., Indian Health Services Health Center, Holten, Kansas
    Bernice Link - Regional Program Supervisor Statewide Program on Aging
12. Kansas Nursing Home Association
13. Individuals who have expressed a certain interest in the Education of Diabetic Patients-Educational process and Media.

    Lawrence Trethar, M.D., Bethany Medical Center, Kansas City, Kansas
    Judy Cobb, M.A., Kansas University Medical Center, Kansas City, Kansas
    Norge Jerome, Ph.D, Kansas University Medical Center, Kansas City, Kansas
    Norma Neufeld, R.D., Kansas University Medical Center, Kansas City, Kansas
    Pat Stein, R.D., Kansas University Medical Center, Kansas City, Kansas

14. Kansas Association for Mental Health
15. National Association of Social Workers
16. Vocational Rehabiltation
17. Kansas Department of Social Welfare/Division of Services for the Blind
18. National League of Nursing

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Testimony Presented to the
National Commission on Diabetes
by: Dr. Virgil Hanson
Professor of Pediatrics
Children's Hosp. of L.A.

DIABETES MELLITUS IN CHILDREN

COMMITTEE ON THE HANDICAPPED CHILD OF THE AMERICAN ACADEMY OF PEDIATRICS

From the point of view of chronic disease management, four problems stand out with respect to diabetes mellitus in children. These are:

1. The inexorable, if slow, progression of severe vascular complications leading to blindness, cardiovascular disease, or renal impairment in the majority of children in later life.

2. The psycho-social impact of the disease particularly in the adolescent years.

3. The probable multi-factorial etiology of diabetes mellitus which is now beginning to be understood.

4. The need for dissemination of frequently updated information to all health professionals involved in child care.

It seems clear that the resolution of these serious problems will require an integrated and comprehensive program of study and treatment of diabetes mellitus. In view of the differences between juvenile onset diabetes and that of adult life it is important that the pediatric centers for diabetes mellitus be established. Provisions for coordination with adult diabetes centers would enhance the work of both.

Functions of Diabetes Centers

1. Research
   - .1 Investigations into the structure, metabolism and function of basement membranes and their relationships to vascular disease needs to be continued and expanded. Studies of the basement membranes of epithelial structures such as intestine and skin might shed additional light on this important question.

   - .2 Current studies implicate viral and immunologic, as well as genetic factors in the etiology of diabetes mellitus and suggest analogies with existing knowledge of autoimmune and neoplastic disease in experimental animals. The multi-factorial nature of spontaneous autoimmune disease in these animals is clearly demonstrated in the interaction of viruses immune response, and intraspecies genetic determinants. An intensified search for xenotropic viruses and their antigens in islet and other pancreatic cells could prove fruitful.

   - .3 Psycho-social disturbances affecting the management of juvenile diabetes mellitus and particularly in adolescence are of major importance in achieving the optimal control which may be necessary to reduce or defer the serious late complications.

.3 continued

Our experience and the studies of some psychiatrists suggest that the psycho-social problems of the diabetic child are not fundamentally different from those of children afflicted with other chronic diseases or handicapping conditions. This hypothesis should be tested and if confirmed more extensive studies of the problems of chronic disease adjustment, particularly with relationship to self concepts, intra-family relationships and the basic personality patterns of children recently described in the psychiatric literature should be carried out. This kind of research is of broad significance not only to diabetes but to all kinds of chronic disease management. Coordination with studies of other chronic disease groups should be productive.

2. Patient care
Pediatric diabetes centers should be organized to provide optimal multi-disciplinary care for the patients, for the demonstration of optimal care to students, physicians, and allied health personnel, and for the conduct of adequate trials of new forms of treatment. The last item is of special significance as new drugs are often inadequately studied with respect to their use in childhood disease.

3. Dissemination of knowledge
Not all patients can live within reasonable distances of major centers. It is important, therefore, to provide information to help the professionals in the outlying areas. These may be organized as follows:

.1 Case oriented education
Reports of consultations are the principle means of communication but these might be expanded to include information concerning psycho-social management. Likewise, to the consultation reports could be added bibliographies of pertinent literature and abstracts of the most significant references.

.2 An organized telephone consultation service for all physicians with advertisement of its availability can be helpful in the dissemination of information. Such a program was recently tried by the American Academy of Pediatrics and found to be useful.

.3 Demonstration clinics in outlying areas.

.4 Postgraduate educational programs.

In summary, the high incidence and serious nature of the late complication of juvenile diabetes mellitus emphasize the need for a major program of research into the etiology of these disease and its sequela. Psycho-social factors are of great importance in the management of diabetes mellitus and research

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in this area is also urgently needed. The provision of centers to provide optimal care for juvenile diabetics will enhance the research, hasten the application of its results, and provide for improvement of care in rural as well as urban areas.

Testimony Presented to the
National Commission on Diabetes
by: Dr. Edward Arquilla
Professor of Pathology
Univ. of Calif. at Irvine

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DEPARTMENT OF PATHOLOGY

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ORANGE, CALIFORNIA 92668

Keathea K. Kreuger
The National Commission on Diabetes
1501 Wilson Blvd., 6th Floor
Arlington, Virginia 22209

June 6, 1975

Dear Ms. Kreuger:

In response to your letter of May 28th I have outlined for you the substance of my presentation to the Commission on May 8, 1975. As the designee speaker on research for the Subcommittee of 15 sponsoring the consortium approach to a coordinated effort for diabetes mellitus in Southern California, we would like to present the following objectives which we feel this proposed consortium should address itself to.

1) To expand and coordinate the research efforts in Southern California that are directly concerned with diabetes mellitus. 2) to increase the visibility of the need for expertise from diverse areas and institutions for research in diabetes mellitus. 3) to coordinate the research activities as a focal point for establishing modes of training and teaching that will benefit the research physician, paramedical training, and patient care.

It should be pointed out regarding the current research efforts in Southern California that there are a number of activities which are valuable resources that are directed to the diagnosis and treatment of diabetes mellitus, related endocrine and metabolic disorders and the ensuing complications. Just to enumerate a few of them, I would like to call to your attention the very solid contribution by the groups at Scripps Clinic in their efforts to isolate a diabetogenic factor from the pituitary. At Irvine there is research directed to the structure function relationship of insulin and also to studies on wound healing as a model for diabetic angiopathy. At USC there is extensive research activity focused on the development of an artificial pancreas. At Santa Barbara there is activity which is establishing positive correlation between measurements of viscosity and glycoprotein constituants of the circulation that have been positively related to complications in diabetic patients.

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At UCLA there are studies on the culture of beta cells and their metabolic behaviour in a tissue culture milieu. There have been an average of 30 - 40 grant requests submiteed to the Southern California Diabetes Association from 40 - 50 investigators annually for the past three to four years. The consortium would be used as a forum whereby all individuals mentioned above and many others could exchange the information, techniques, animals and analyses in order to implement individual efforts in various places.

There are numerous institutions such as the Scripps Clinic, Salk Institute and the Jet Propulsion Laboratory which have expertise in immunology, molecular biology and engineering modalities respectively that could very significantly catalyze research efforts in diabetes if it were possible to activate their interests. This second objective of the consortium is indeed a provocative one and one which we hope can be implemented by establishing specific workshops and symposiums which will be directed to the recruitment of such institutions into the research efforts directly related to diabetes.

Another valuable resource which could stabilize and augment the efforts of the consortium are the voluntary agencies in California that are well organized and dedicated to research efforts in diabetes. I refer specifically to the Southern California Diabetes Association which has had a very active research support program and a model educational program that is expanding at a very rapid rate. The consortium proposes to establish modes of training which are based on active research which is to be integrated so that training of medical practitioners and paramedical people will be added to the current efforts directed primarily to the patient. The consortium will also be able, in this sphere, to establish a peer review of such programs by coordinating the research institute activities as a focal point for the peer review of training programs and finally it is extremely important that the consortium coordinate the individual research establishments as trainors for future diabetologists both locally and nationally through fellowship orgrams and intensive highly specialized training activities for practitioners and investigators.

Because of the very disperse nature of the population which must be served by the proposed diabetes center, we feel that the consortium approach to this endeavor would probably best serve the needs of most of the investigators, hospitals, diabetologists, medical practitioners, paramedical support personnel and the diabetics in the community.

Respectfully submitted,

E. R. Arquilla / S.P.

Edward R. Arquilla, M. D., Ph. D.
Professor and Chairman

ERA:sm
Dictated but not approved

Testimony Presented to the
National Commission on Diabetes
by: Dr. Lowell Sparks
Endocrinologist
Sansum Medical Center

Lowell L. Sparks, M.D.

Dr. Crofford, Members of the Commission:

I appreciate the chance to be able to speak to you, and I feel I'm wearing two hats today. I'm representing myself, my own Clinic, but also I'm representing the practitioners in my area and also the consortium, the ad hoc group that we formed here.

I want to address myself to the question of education, both of the public, of the patient, and of the profession, and I would like to share with you my experiences at the local level, the firing line so to speak, in the practice of clinical diabetes and try to integrate a little bit how the experience at the local level fits in with what we're talking about at the regional level and perhaps at the national level. When I came to Santa Barbara approximately 7-1/2 years ago, the situation was somewhat like this: Our community had a long standing treatment involvement in diabetic treatment, and there had been a teaching program in our Clinic that had originally been started for patients because at that time the doctor who founded our Clinic manufactured his own insulin and started his own treatment center for diabetes before insulin was generally available. This went on in the 20's, but then in the 30's and 40's as diabetic treatment and insulin became available everywhere and treatment modalities were standardized this type of program died out in the community. We now have a 44-man general Clinic with no particular emphasis on diabetes. But it became apparent in the 70's that there was still a problem, that we were having difficulty in making the type of program that we wanted for our patients. And, in particular, things like this were happening, parents with children were traveling long distances, for example from Santa Barbara down

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to the Los Angeles area because they felt that in the local area they could not get the proper guidance and so forth in the care of their children. So in the course of several years, we formed a lay organization in Santa Barbara which was primarily made up of these parents. We then gradually realized that there was a larger organization in the Los Angeles area which was then called the Diabetes Association of Southern California. Now out of this group we have subsequently evolved a teaching program for diabetic patients and their intimate family members. Now, we again tried to do our own thing, but we were able to rely on resources which were already here in Los Angeles. Teaching programs were then going on this area, and we patterned our own program after this. The basic program involves ten hours of instruction. We limit our classes to ten patients, we ask each patient to bring his closest family member with him, so that over the period of a week that would involve, as all the programs in this area do, four hours of instruction by the nurse teacher, four hours of instruction by a dietitian, and two hours of discussion and teaching about the complications by a physician who is knowledgeable in the field of diabetes. We charge each patient $10 for this course. We made up a packet---the history of the packet is interesting because the same parents who before we had any coordinated activity, who were themselves meeting together in each other's homes trying to share the burdens that they felt as parents, that they found no other outlet for and it was through this group that we started originally making out the packets which we put on the pediatric wards of the

two hospitals of our community which had pediatric wards so that when a child newly diagnosed came in the packet was there waiting. It had an instructional textbook which we bought and supplies, and various literature that we were able to obtain both from the local diabetes association and from pharmaceutical companies and so forth. We included a little blurb which encouraged the people to join our local society, the diabetes association, and also told them where to apply or to send away for a Medic Alert bracelet and other information. Well, it's interesting about that packet---they just disappeared. We would have two or three on the pediatric ward and they walked away. It became apparent not only were the children using them but various adults were too. So that packet then became the information source that we use in our training course. Now in the course of going through these discussions that our various committees have had and also in talking privately in the last couple of days, I've learned a lot---and that is that there are a lot more of these programs going on than I dreamed. And I had discussions with Linda Byers who is one of the moving forces at the local association office here and she told me that when she started a year-and-a-half ago there were eight programs going on, I'm talking about patient education programs now, going on, ten-hour type instruction programs. As of today, right now, there are nineteen going on which are based on the Diabetes Association 10-hour format. We also know there are at least three other programs going on in this area which are in institutions which are not using this format or which are geographically at some distance. And at the

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present time there are ten more programs in the planning stage and that all of this is going on so fast that the people in the office can't keep up with the demand for help in trying to get these things off the ground. So I think that you can sense that this is a very active area and the response on the part of the people who have taken our own course, to give you my own personal experience, has been very gratifying. They speak very highly about it, they go out and tell their friends who have diabetes about it, and they go back and tell their doctor about it and the doctor gets interested and he sends us more patients. Now I'd like to say a little bit about the cost because I've cost accounted our program, and it turns out asking each patient to pay $10, which is waived in case of need, our program in Santa Barbara, which is once a month costs, including that $10 towards the cost of the program, is $70 per patient. Now if we were to increase the number of patients so that we would be meeting weekly, we would be doing 40 patients a month, then we could get our cost down to approximately $44. Now, of course, we could greatly decrease our cost if we had 100 patients at a time but our finding with our last course which was given at the end of last month, was that we were already getting a lot of auditors, people who wanted to come back and take the course again and we were getting beyond this 10 patient plus 10 family members and finally getting too big and we can't give the type of personal instruction---somewhere between 10-15 is the optimal number. So then if we ask how many people are currently being trained right now in this area, Linda tells me that there are approximately---over the past 6 months at 10 different

places, 10 patients per month makes 600 over the last 6 months, so if we project over a year's time that's 1,200 patients currently being instructed or trained. Now if we look at the geographic area we are talking about, we are talking about an area which encompasses perhaps 12 to 14 million people; if we use a round number, 2% as the total number of diabetics we are talking somewhere between 240 to 280,000 diabetics or if we say that of the population that 0.1 of 1% is going to represent the number of new cases per year in our area then there are approximately 12,000 to 14,000 new diabetics in the area. We're currently training 1,200 per year so we're reaching approximately 10% of the newly diagnosed diabetics, if we assume that everybody in these courses is a newly diagnosed diabetic. But they're not, so that we're sort of just scratching the surface. Now I'm not proposing that the commission should seek to fund these programs because---it's been very interesting that the local association office---it's expenses have been in terms of some organizing help in supplying a packet of information describing the course, various types of diet lists, various sources of information and so forth that are useful and some of this we use in our packets in Santa Barbara. Now the cost to the office here in Los Angeles is approximately $24 <u>per program</u> per year. That is very inexpensive. And these other costs that I was talking about, somewhere between $40 to $70 per year, those costs are currently in most communities being absorbed by the hospital. The nurse and dietitians are being paid overtime by the hospital involved; the hospital is paid the $10 by the patient---that goes to the hospital,

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the dietitians are being paid and in most areas, we've been able to operate this way. My suggestions then are two: first of all that I think this is an expression of the need which both the lay population, the patient, and the professionals will perceive, and that this is a program which can be done and coordinated with a minimum amount of expense and it creates a lot of enthusiasm within the hospital because it not only involves just the patient whether they are an out-patient or an in-patient, but it stimulates the in-service program, it stimulates the diabetics to come to the hospital and actually see what the hospital looks like, and there are a lot of beneficial aspects of this, but I think that what we do need and this has come out in conversations over the last few days, we didn't even know how many programs were going on---even among the people who were putting them on. Our great need is for some assistance and this is where funds could be used---in helping various hospitals who are trying right now to help get their programs off the ground to help them with seed money to get their programs going which will then be self-sustaining and furthermore, and I think more important, to allow the people who are involved in these programs to get together and to say: how did you do it in Orange County, how did you do it in Palm Springs, how did you do it in Santa Barbara, what are your problems, what is your solution, and I think this would be very useful. Now I asked Linda what are her problems in terms of trying to get this off the ground. I told you about her problems with the overwhelming numbers of places that want to start a program. The other things that she felt were problems:

we have no idea really of what our quality control is, we don't really know what is accomplished in terms of amount of the education. Now at our particular place we are giving a test that I stole from one I heard about that was being used at Vanderbilt and we give that to the patient at the beginning of the course and at the end, and I haven't had time to look at these so we don't really know, and I think most of these courses are doing this, we don't know if these are the best questions, what it means when somebody does worse at the end of the course on certain questions than he did at the beginning; then the other thing that became apparent to me is that we have a group of nurses in this area whom we could call diabetic teaching nurses and they are infinitely involved in these programs at the hospital and I learned this morning that there are 15 such nurses in this area who spend at least 75% of their time totally devoted to diabetes, either care, teaching or research in the field of nursing as it applies to diabetes. These girls have met as a group and they are seeking some guidance and standardization, they would like to have programs established so that they can go to some institution, perhaps, and spend three months and then be certified as a diabetic teaching nurse just like we now have coronary care nurses, emergency room nurses, renal dialysis nurses; in other words, they should be given the sufficient training and the professionalism which along with what they're doing right now and I would like to say parenthetically that I think this is one of the things that we missed the boat on in our own group, we didn't let these girls express themselves quite as fully as they should. I think they really should

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be heard by the commission at some time, and I can give you their names. Okay, now I would like to move on then from lay education to professional education and then I would like to---I've already spoken somewhat about the teaching nurses and I've spoken about their activities in terms of independent practice, teaching and research and again I would like to use my own experiences to maybe give you a feel of this. The teaching nurse in my own hospital just evolved an interest on her own part. She had previously worked in some drug programs in the New York area and she liked this idea of teaching and so when this position became available---she really makes $25 a month which is no great shakes for her---for the four hours spent, but she has been an innovative force in our hospital, in-service has come to her and said, "What are we going to do about a program here in the hospital; we've got ten different wards and there is no standardization on the ward as to whether we do a first morning urine Clinitest, or whether we do a double void..." simple things like this. In my own hospital when I have asked the teaching nurse to see a patient for instructions, I asked her to put her notes in the progress notes because she is just as much a professional as I am. I feel that these nurses may be capable of independent practice and this needs to be explored more fully. Okay, now finally I would like to talk about the professional education of the physicians. I personally think that the way that we're going to greatly improve the standard of care as far as diabetes is concerned is by having more physicians who are trained well in clinical diabetes mellitus and who are out in the population centers

in local communities. We have a great need in Southern California at this time for this sort of individual and to my knowledge they are not being trained at very many centers. We counted on our fingers that there are maybe two or three such individuals currently being trained in Southern California. And I think that given this sort of individual, that you put him into a particular area of Southern California which is maybe not downtown next to a University, but still in a relatively densely populated area. This individual then serves as the center for the diabetic effort because he and the nurse practitioners who are already present and active in many kinds of activities relating to diabetes, these two people work together as a common effort and it's from them that the program of intern and resident training, the patient education effort, all of this flows I think from this particular relationship of two individuals. I also think that there is no lack of patient material in our communities in terms of clinical diabetics and my own experience has been that there has been no hostility whatsoever on the part of the practicing physicians. This is a need that they perceive and they would like to have this type of individual in the community, so it is not a threat to them, it is not taking away from anything. As far as the physicians who are already in practice, I think that they have each evolved their own style of practice that they are comfortable with, and I think that we can have lots of post-graduate courses which some of these people, as I said earlier, it seems like the same guys always come and it's like being in church, you really want to reach the people that aren't there.

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Well, I'm not sure of how much we can change these people but I think we can drastically change the practice of clinical diabetes if we put specialists in the community and then their expertise can be called upon by the physicians who are already in practice and I don't think there is going to be much in the way of conflict. Now finally I would like to look down the pike a few years because extending on this general theme I think that we are going to see that then and in the not too distant future the evolution within our major hospitals of a diabetes and metabolism type center just like we now have a coronary care center or we have a renal dialysis center, because I think that we're going to be soon faced with the problem of what patients do we put in an artificial pancreas, what patients will we transplant. what patients do we maybe give islet cell infusions to, and I think once we get into that we are going to have to have special expertise in every major hospital and again it's going to be physicians who are trained in the complications, in managing diabetics who are in difficult straits, the expertise of the training nurse and I think that this is going to make a team and I think that we should look forward to this not too improbable situation.

Testimony Presented to the
National Commission on Diabetes
by: Dr. Rachmiel Levine
City of Hope National
Medical Center

REMARKS OF DR. RACHMIEL LEVINE AT THE MEETING
OF THE NATIONAL COMMITTEE ON DIABETES*
Los Angeles
May 8, 1975

I want to reiterate here that the area that we are concerned with stretches from north of Santa Barbara to San Diego and the Mexican border. There is in a sense a megalopolis. And how do you deal with a center for a megalopolis? One could do it in one of two ways. One could go with a traditional concept of a center (Remainder of sentence unintelligible).

There is a certain amount of money available in some kitty (whatever it is called) and you invite applications for centers. These have by tradition consisted of the following: A person is put as a principal investigator and then he gathers around him all kinds of other people and what is required is that they belong to the same institution generally, and one tries to have an integrated activity consisting generally, until recent years ? of research only but research in an integrated fashion where various disciplines are concerned. What happens then, in the let us say competition for such centers, is the striving of each of these institutions to have as much scientific research clout as possible. If they don't have it at the moment they import it, and these things then go to a committee and a site visit is taken and generally one out of a needed 10 or 20 is granted. Now there is nothing magic about a center which simple relates to one institution only. There are certain legal niceties about it but that's all because what is meant by one institution, what is meant generally, is a university or medical school sitting within a university setting.

*Transcribed, without editing, from tape recording.

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Very often this is not one geographical place. You all know, and you have belonged to institutions which are called by the same name but the constituent members thereof live and operate 10, 15, 20, 30, 40, or 50 miles away from each other but are still called by the same -- university or medical school title.

All that we are proposing here is that a consortium of interested people consisting of those individuals in these institutions in this whole geographical area be formed as a legal corporate entity. We don't know all the details and I will have something more to say about it. That this group constitute itself and call itself The Diabetes Consortium or some such name. That it has headquarters at a geographical location generally at one participating institution. That it take care of many items in this. That it first of all be the agency to whom a grant can be made and we don't know of the legal niceties thereof. That it have committees of expertise in various areas and these areas be education and research and standards of care in diabetes. In other words, this would be the expression of the most active professional group in diabetes in the area. This is the agency. It's headquarters are located, its people are responsible, and it seemed to us that this approach would have the following benefits: Certainly in the field of patient, doctor, nurse, dietician, and other health professional in the field of diabetic education the advantages of a central institution consisting of all the professional people crossing university, and college, and hospital line would make

Dr. Levine

for the creation of first-rate standards in the care and teaching of the diabetic. Certainly in this age of PSRO's that are upon us, this could be our own PSRO for diabetes and all of its complications in setting standards. Thirdly, one of the things that was expressed by the ad hoc committee members yesterday at the meeting here was the fact that the arrival of this Commission for the first time within the memory of the people of Southern California has brought together in one place the institutions and representatives of these institutions most vitally interested in diabetes in the area. And why couldn't that be perpetuated. Not only for a hearing before a Commission but for the pursuit of the work, for a pursuit of the education and for raising and maintaining standards in the field. As a matter of fact, if the notion of the consortium has insurmountable legal obstacles, I for one, and there are many others in the group that feel this way, will feel it incumbent on myself to have these people in these institutions associated, in some way, for the mutual interchange that should go on continuously in the field. I think it would help all of us.

Now we come to the area of research. Research has always been somewhat sacrosanct. There are many traditional opinions about how research gets done and generally its the "scholarly" approach that prevails. And that generally says -- that one cannot plan -- one cannot organize research -- this is a God given spark that is between the All Mighty and the one single individual in his waking or sleeping hours. Well, I'm afraid there is a little truth in this because one

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sees the individual effort as flourishing and I must say on reflection that I have not seen great things come from centers as far as research investigation and perhaps these are the aspects that should be called development rather than research that would benefit from close cooperation between groups rather than from competition among individuals for the resources. Furthermore, techniques and technical achievements in the development area, would it seems to us, greatly benefit from such a concerted consortium.

Now I have remarked several times that we don't know the niceties or the legal aspects of such a thing or even the working aspects of how to construct it, and I was very glad when today, Dr. Clark, on behalf of the Foundation handed me a letter, by himself, offered the Foundation that the Foundation would foster some workshop sessions at the Foundation Headquarters in which the group in Southern California could get together and read and acknowledge the details of such a piece of machinery. And I was very glad to hear that. I would love if I be permitted that once we have such workshops to give a precede of deliberations to the Commission at some later date, but this is the general notion.

Thank you.

Testimony Presented to the
National Commission on Diabetes
by: Dr. Maurice D. Kogut
Professor, Children's Hospital of Los Angeles

Maurice D. Kogut, M.D.
Professor of Pediatrics
U.S.C. Department of Pediatrics
Children's Hospital of Los Angeles
Los Angeles, California

Statement re: Informed Consent Related to Research in Children

The present NIH guidelines concerning research in children explicitly restricts research in children that is of non-therapeutic immediate benefit to that child.

In my opinion this restraint will have a detrimental effect on the health of all children presently living and these yet to be born.

In the broad sense, any research effort designed to understand the natural history of disease such as infants and children who have genetic predisposition to Diabetes Mellitus can not be conducted at this time. It has been the traditional role of the physician, particularly the pediatrician, to prevent disease e.g. polio, dyptheria, measles, etc. In diabetes it is crucial to investigate those factors in predisposed individuals (e.g. immunization, viral, hormonal changes, etc.) that may have some importance in the pathogenesis of precipitating acute diabetes. Although it is important to conduct research in children who already have diabetes in an attempt to prevent complications, it is more important to devise methodology to identify those factors which precipitate frank clinical Diabetes Mellitus.

In regard to the infant of the diabetic mother in whom there is high neonatal mortality and increased incidence of congential anomalies, there is a great need to understand those intrauterine factors responsible for these terrible detrimental effects on the fetus. Thus, fetal research and research during the pregnancy, labor and neonatal period is crucial.

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Fetal research has now been prohibited. If we are to make any dent in increasing neonatal survival and preventing congenitive abnormalities, particularly in the not-well understood infant of the diabetic mother, there must be research in these areas.

Finally, in response to therapeutic research, we must be able to conduct drug and treatment trials in children so that we can legally, morally and scientifically be able to use new treatments in children. To deny a a sick child a drug because we have no idea of how this drug is metabolized in the child or understand its action, we are depriving a large segment of our population (infants, children and adolescents) the benefit of medical advances. A child is not a small adult, nor can animal research be translated into data that can be applied to the child. Currently, to use any drug that has not been tested in the child, according to FDA regulations, must be accompanied by an appropriate informed consent or else the physician may be practicing illegally. The consequences of this restraint are far reaching.

I urge the National Commission on Diabetes to use their influence to persuade the NIH to reverse their decision concerning the informed consent ruling the child.

Testimony Presented to the
National Commission on Diabetes
by: Mr. James B. Cobb, Director
American Group Practice Assoc

AMERICAN GROUP PRACTICE ASSOCIATION

STATEMENT ON PATIENT EDUCATION

Patient education is the process by which patients and/or those responsible for their care are taught their roles in the maintenance of health and the treatment of disease, and are motivated to carry out their identified responsibilities.

Patient education is an integral part of quality health care.

Effective patient education programs are based upon the needs and resources of both patients and health professionals. They should consist of directed efforts toward achievement of stated goals. Program objectives must also be capable of evaluation.

These programs, provided by trained patient educators, should be focused on improving health through the cooperative efforts of patients and health professionals.

It is the responsibility of health professionals and the institutions and organizations they represent to establish, maintain and evaluate such services. Appropriate standards for the quality, delivery, utilization and costs of such health care services must be established.

Cooperation on the part of the informed patient is also vital. For this reason, it is recommended that educational programs be planned as an integral part of comprehensive health care delivery systems which recognize the informed patient as an essential member of the health care team.

Payment for qualified educational programs appropriate to the health needs of the patient is a legitimate part of the health care costs. Recognizing that community education and preventive information are of immense value, it is recommended that financing of such efforts be more broadly based through the joint efforts of health care institutions, organizations, foundations and governmental agencies.

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AMERICAN GROUP PRACTICE ASSOCIATION

GUIDELINES FOR REIMBURSEMENT OF PATIENT EDUCATION

The following guidelines are advocated for reimbursement of patient education. They have been formulated with consideration of the need, implementation, quality, utilization and cost of such services.

1. The goal of patient education programs must be to improve health and the delivery of health care services through the cooperative efforts of informed patients and health professionals.

2. Patient education services must consist of planned efforts with stated goals and objectives, based upon identifiable needs and resources.

3. Patient education services should be available only on physician prescription and must be documented in the patient's health care record.

4. Patient education services must be appropriate to the immediate health needs of the patient and must be provided under the direction of a trained patient educator.

5. Patient education services must be provided under the overall direction of a patient education committee, composed of members of the health professions, administrators and consumers. The Committee should be responsible for the establishment, maintenance and evaluation of all patient education programs.

6. Patient education services must be subject to quality assurance review.

1/10/75

Testimony Presented to the
National Commission on Diabetes
by: Dr. John A. Galloway
Clinical Research
Marion County General Hosp.

May 2, 1975

To: National Diabetes Commission
Hearings on Education on Diabetes
Los Angeles, California
May 7, 1975

From: John A. Galloway, M.D.,* Chairman
ADA Task Force on Third Party Payment for Diabetes Education

Re: Present status of payment for diabetes education by third-party payers

Because the American Diabetes Association believes that education is an essential part of diabetic care, last fall Dr. Max Ellenberg, President of the ADA, appointed a Task Force to deal with the issue of getting third-party payers to pay for education. The group consists of the following members: Theodore G. Duncan, M.D., Donnell D. Etzwiler, M.D., Mr. Ted Higgins,** Arthur Krosnick, M.D., Miss Rita M. Nemchik,*** and Kelly M. West, M.D.

To date the Task Force has attempted to determine how diabetic education programs are currently being funded, what the national and local philosophies of the major carriers are, and to develop a strategy for bringing about a change in present payment practices.

Our findings are that there are currently no diabetes education programs in the United States, the costs for which are fully paid for by third-party payers. In all instances where diabetes education goes on, the costs are born partly or <u>in toto</u> by support from sources other than insurance. Usually the charges for education are billed as professional services, included in laboratory charges, or filed in some other category acceptable to the carrier. Several educational programs are supported in part by federal and state grants. While at the national level Blue Cross and Medicare and others subscribe to the theory that education is an important aspect of medical care, at the local level this is not being implemented. There are two basic reasons for this: First, there are at present no well-controlled studies demonstrating that education does in fact modify behavior to the extent that the added costs of instruction programs to the carriers would be offset

*Lilly Laboratory for Clinical Research, Marion County General Hospital
**American Diabetes Association Staff
***Also member of the American Association of Diabetes Educators

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by savings resulting from reduced utilization, such as time in the hospital or visits to the clinic or physician's office. Second, even if education were clearly demonstrated to have a favorable preventive effect, for the carriers to accept education as a reimbursable expense, it would be necessary to clearly define what constitutes education. This definition would have to include careful cost-accounting, standards for content, and continuing quality control for all programs that are supported. If the types of programs to be funded were not carefully selected and monitored, the expense to the carriers would be both unpredictable and unmanageable.

The intention of the Task Force is (in association with other committees of the ADA, in particular the Committee on Diabetes Education Centers and Systems, T. Franklin Williams, M.D., Chairman) to conduct a retrospective study of several types of educational programs (large indigent institution, small private hospital, private clinic, public clinic, etc.) for which there are factual data on the costs of the programs. We will use as controls patients of similar socio-economic status, age, sex, type of diabetes and medical milieus except that they do not have education programs. The end points to be examined are the effects of education on number and length of hospitalizations, body weight, and diabetic control. A prospective study was considered but definitive action on the issue was thought to be required sooner than a prospective study would permit. Hopefully, the costs of the study we are contemplating can be assumed by the major insurance carriers. When the results have been compiled a symposium would be held to disseminate the data to all interested parties.

In summary, the third-party payers are essentially an untapped resource in the development of one of the most important aspects of patient care. We believe that there exists in the ADA and in the insurance industry the willingness and expertise to eventually bring to a majority of diabetic patients quality education programs which will have a great preventive medicine potential.

John A. Galloway, M.D.

NATIONAL COMMISSION ON DIABETES

Veterans Administration Hospital
Seattle, Washington
May 10, 1975

Public Hearing Number Four

Saturday, May 10, 1975

Public Testimony, Statement Included	Dr. Robert H. Williams (read by Dr. Oscar Crofford) Dr. George F. Krakowka Mr. F. R. McAbee Dr. George Hom Mr. Leonard Downie Mrs. Mary Anne Allen Mrs. Rita Gill Mrs. Louise Jones Mr. Gordon Tongue Ms. Barbara M. Prater Dr. Marvin L. Rallison Dr. Jerry P. Palmer Dr. Donald G. R. Blair Mrs. Carol Blainey Mrs. Shirley Walker Mr. Glen Jensen Mr. J. Richard Morrow Mr. Leonard A. Haba Mrs. Larry Nelson Ms. Joan Dunn (read by Mrs. Larry Nelson) Mrs. Richard Whipps (read by Mrs. Larry Nelson) Mr. and Mrs. R. L. McCaslin (read by Mrs. Larry Nelson) Mrs. Ann Kennaly (read by Mrs. Larry Nelson)
Statement Submitted without Personal Testimony	Mr. Tim W. Anderson Ms. Angelina Boese Ms. Ruth Boyle Ms. Janet Brock Mr. and Mrs. Lee Cayton Mr. Mike Clemenson Mr. Jack Flynn Mr. D. Robert Hayward Mrs. June Hicks Mr. and Mrs. Leyton Ms. Sue McAbee

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Mrs. Robert C. McLean
Mr. and Mrs. J. E. Morrow
Mrs. Gary Roth
Mr. George G. Staples
Mr. George L. Wherley

Testimony Presented to the
National Commission on Diabetes
by: Dr. Robert Williams
Dept. of Medicine
University of Washington

Robert H. Williams, M.D.
DEPARTMENT OF MEDICINE
UNIVERSITY OF WASHINGTON
SEATTLE, WASHINGTON 98105

PROFESSOR OF MEDICINE

HEAD OF DIVISION OF ENDOCRINOLOGY
UNIVERSITY HOSPITAL

April 23, 1975

National Commission on Diabetes
Dr. Oscar Crofford, Chairman

Dear Members of the National Commission on Diabetes:

I have spent the major part of my time in the past 20 years dealing with research and teaching concerning diabetes, along with caring for patients with this disorder. I am thoroughly convinced that throughout the world we do a relatively very poor job in the diagnosis and treatment of this disorder. No one has established the specific primary etiology for most patients. The only definite way that we have for diagnosing the disease is based on glucose measurements, yet approximately 75% of the patients so involved have vascular disorders before abnormalities in the glucose levels can be detected. The most dependable evaluations thus far of the use of oral antidiabetic drugs indicate that the net disadvantages exceed the advantages. Indeed, they actually lead to the death of the patients. Despite our using insulin as intelligently as we know how, diabetes often causes blindness, severe coronary disease, strokes, kidney failure, gangrene and premature death. The costs involved in dealing with the disease are astronomical, considering the large amount of loss of time from work, and costs for medicines, hospital bills, physician's fees, and other expenditures.

Experiences with a number of other diseases have indicated that when we demonstrate the primary etiology, we greatly increase our opportunity for offering excellent prevention and therapy of the disorder.

For optimal progress in dealing with diabetes, we need extensive support, financial and otherwise, from the government, from private citizens, and from the public at large. We need to have much better organization of our approaches in dealing with the problems of the disease. We need to increase greatly the research activities, utilizing scientists with a variety of backgrounds; for example, geneticists, biologists, chemists, physiologists, physicists, bioengineers, pathologists, clinicians and others. Moreover, it is highly important that we have splendid collaboration between these various scientists and a considerable amount of coordination. Provision of a number of common research facilities can greatly increase efficiency and progress. Establishment of diabetes centers in the most appropriate locations can serve enormous advantages. We at the University of Washington have already begun to observe the very great benefits that can be derived from a Diabetes Center.

In conclusion, I strongly urge great stimulation of interest and support, financially and in a large number of other ways, from the public, Congress, and other individuals. It is important to have much more extensive attention to solving problems of diabetes. We need much collaboration and coordination of activities. There is hope that we can conquer this disease that is continuing to cause so much distress in so many different ways, including early death.

Sincerely yours,

Robert H. Williams

Robert H. Williams, M.D.

RHW:sk

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820 NORTH CHELAN AVENUE WENATCHEE, WASHINGT

Testimony Presented to the
National Commission on Diabe
by: Dr. George F. Krakowka
Dept. of Internal Medic
Wenatchee Valley Clinic

WENATCHEE VALLEY CLINIC

April 1, 1975

National Commission on Diabetes
Westwood Building, Room 626
National Institute of Health
Bethesda, Maryland 20014

Dear Sir:

I am a physician, who is certified by the Boards of Internal Medicine, and recently re-certified on an examination. My subspecialty has been endocrinology with primary interest in diabetes. I was in charge of the diabetic school for Doctor Walter at the Mayo Clinic for nearly a year when he went to NIH on a research project. Since coming to the Wenatchee Valley Clinic in October 1951 I have taken care of most of the people with diabetes in the area and have had a close relationship with the University of Washington, particularly Doctor Williams and his work with diabetes. I have called on him for help in consultation on many occasions. I feel he is a most outstanding man personally as well as in research and his ability to attract brilliant young men to his staff.

I have been president of the state diabetes association on two different occasions and at the present time I am on the Board of Governors representing the eastern part of the State of Washington.

Thus, I feel very strongly that the University of Washington should be recognized for its contribution to research in diabetes and next I feel that research must be done to find an actual cause of diabetes and better treatment for the complications of diabetes causes morbidity and mortality and not the high blood sugar itself. I would be particularly proud if Doctor Williams and his group at the University of Washington would be among the first, if not the first, to come out with the true cause of diabetes and a better treatment.

Thank you for this consideration.

Yours truly,

George F. Krakowka

GEORGE F. KRAKOWKA, M.D.
Department of Internal Medicine

GFK:sg

cc: Honorable Warren G. Magnuson
UNITED STATES SENATE
Washington, D.C. 20215

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Testimony Presented to the
National Commission on Diabetes
by: Mr. F. R. McAbee

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TELEPHONE SUNSET 3-2600

April 7, 1975

Oscar B. Crofford, M.D., Chairman
National Commission on Diabetes
Vanderbilt University School of Medicine
Nashville, Tennessee 37232

Re: National Commission on Diabetes
Hearing May 9, 1975, Veterans
Hospital - Seattle, Washington

Dear Dr. Crofford:

It is with a real sense of gratitude that I present to the Commission my experience and history of diabetes in our family. Because of the intimate knowledge of the ravaging effects of the disease on children my wife and I are personally committed to do everything in our power to assist in the research program that has been established by the National Diabetes Center.

My first knowledge of diabetes was when my maternal grandfather was diagnosed as a diabetic when he was nearly seventy years of age. We considered it a disease of the elderly and were stunned when we were told our son at 5 years of age was a serious diabetic. His condition had not been diagnosed until he was desperately ill. He had suffered with measles, chickenpox, and whooping cough, one ailment after another until he had little strength with which to fight.

He was immediately put on insulin and he improved rather rapidly and lived a comparatively normal life until his diabetes became very brittle and extremely hard to control. He died in his thirthieth year, leaving his wife and two daughters four and six years of age. Our son's two daughters are now in their mid-twenties and neither of them have shown any signs of diabetes.

The other son who has never shown any symptoms of diabetes has a diabetic son. He was also diagnosed at the age of five years. He is now in his teens and does far better than his uncle did thirty years ago.

My Father and Mother were never considered diabetics. However, my Mother had a sister who was diabetic and died of the effects in her sixties.

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O. B. Crofford, M.D., Chairman 4/7/75

When I was fifty years old I was diagnosed as an occult diabetic and was advised to eliminate sugar and sweets from my diet, along with other precautions. It was not necessary for me to take insulin to control my blood sugar until I was 68 years of age.

Since the father and mother of our diabetic grandson are not diabetic we realize the malfunction is genic in the family, and can reveal itself at any time.

For some unknown reason there has been just one member of each of five consecutive generations that became diabetic as an adult or a juvenile.

Our family has proven that while the gene is in the family, it does not always follow a straight line, but jumps sometimes from one family to another family in the following generation.

We do not know where it will strike next. We are, as many millions of others in this country, profoundly dedicated to determining the cause of the disease, and then the cure or prevention in future generations.

Dr. Robert H. Williams and his staff are doing basic research to find the cause of diabetes as well as developing earlier diagnoses and better treatment for diabetes.

It is my opinion after working closely with Dr. Williams and his staff for the past two years that they have the potential to make a great contribution toward the control and ultimate prevention of the disease.

My family joins me in expressing our gratitude for what has been done and with a strong and steadfast belief that through this Center and others, diabetes will be conquered.

Thank you for your visit to Seattle and your recognition and support of what has been, and what can be done here.

Respectfully yours,

F. R. McAbee

FRM:f

Testimony Presented to the
National Commission on Diabetes
by: Dr. George Hom

It is a pleasure to be here today to testify before you. I would like to commend your people for your foresight in picking Seattle to be on your itinerary.

Within the last two years, especially when I was Director of Asian Counselling and Referral Service and Coordinator for the Pacific N.W. Region of the National Coalition of Asian Americans and Pacific Island Peoples for Human Service and Action, I had noticed the serious health problems of Asian Americans, especially with diabetes.

There are several parameters relating to the problem of Asian Americans who are diabetics. One of these is the lack of available health education for Asians, for example, the scarcity of bilingual materials and health educators. The second problem is the perpetuation of the sterotype that Asians don't have problems, that they have made it, or that they take care of their own. The fact of the matter is that Asians do have problems in terms of adequate nutrition, discrimination in housing, job advancement, and medical attention. Another problem is that, generally speaking, Asians have underutilized all public services, including services for diabetes, because these agencies have not provided adequate community outreach or hired any Asian personnel on their staff. Another problem is that the providers of these services for diabetes lack the cultural awareness of the Asian community. A correlary to this is the lack of awareness on the part of consumers of the availability of these services. Historical and psychological barriers further compound the problem.

The fourth factor is the paucity of research information concerning Asian diabetics. Today there are approximately two million Asian Americans

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in this country. If we use the generally accepted fact that one out of twenty will develop diabetes, then potentially there are 100,000 diabetics who are Asian Americans. This is a large number of people who will be afflicted with this disease. This is a serious problem.

What can we do about this problem?

(1) Allocate money for the translation of relevant educational information on the prevention and care of diabetes.

(2) Training and hiring of Asian American nurses and physicans to provide adequate outreach community services.

(3) Cultural awareness training for the existing staff so they would be more responsive to the needs of the Asian American people in their own community.

(4) Develop preventive programs and diets relevant to Asian Americans.

(5) Research on the nature and extent of diabetes among Asian Americans.

Testimony Presented to the
National Commission on Diabetes
by: Mr. Leonard Downie

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APPRAISAL ANALYSTS
LEONARD DOWNIE M.A.I., A.S.R.E.C.
President

Consultant and Financing Services for Real Estate and Construction Projects

April 11, 1975

Oscar B. Crofford, M. D., Chairman
National Commission on Diabetes
Vanderbilt University
Nashville, Tennessee 37232

Dear Dr. Crofford:

RE: UNIVERSITY OF WASHINGTON
CONFERENCE ON DIABETES

Known diabetics have benefited greatly from scientific research carried on over the past 10 to 25 years. We have made great progress but this disease is still of major concern to millions of people all over the world.

The unknown persons subject to diabetes must be detected and made aware of the serious effect it may have on their health. Our University of Washington Research Center, under the able direction of Dr. Robert Williams, is making great strides in detection including the unborn baby. We hope they can continue this valuable work.

We have experienced the effect of diabetes in our own family and it was originally detected unexpectedly - and just in time! Now we notice warning signals in other members, particularly our grandchildren.

We need new and improved methods of care and detection. Support funds for our research centers deserve high priority.

Sincerely yours,

LEONARD DOWNIE
LD:bm

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Testimony Presented to the
National Commission on Diabetes
by: Ms. Mary Anne Allen

I have been an insulin dependent diabetic for 30 years. There was little it prevented me from doing in my youth because it is not my nature to give up, however, it did change my social life due to the emotional changes within myself. Being different is difficult for a young person, no matter if it is a visible defect or not, and because of the lack of education of the public at that time especially, I hid my defect even from friends. Being tied to the syringe is one thing, but to be a slave to the groceries was, and still is, a most inconvenient way to live freely.

I am married and have 4 children ages 8 to 19 years. I had difficult pregnancies and lost 2 children in the early stages or pregnancy. They were all born by caesarian section and all very expensive. I have lived with and accepted diabetes with all its inconvenience and expense, but if there is a chance for a cure, a better method of control, I want people to know that there is little I would not do to fight for this end. After 30 years of trying and succeeding in some ways to lead a fairly normal life, to accomplish most of the goals important to me I must now face the fact that I have Diabetic Retinopathy which has left one eye extremely weak, resulting in poor vision and an uncertain future for my eyesight. Too little is known. I have Diabetic Neuropathy which has caused damage to the nerves in my wrists, not fatal, but painful. I have had such severe insulin reactions that I was unable to be left alone or be in public without a member of my family with me. I apparently lost the ability to recognize the early signs of shock and could not help myself in time. While these reactions have subsided during the day, I rarely get through one month without going into shock in the early morning hours. I must depend on my husband to bring me out of it. It is a confusing and emotional situation for me even though my husband knows what to do and is more than considerate. I would never spend the night away from home without a member of my family with me - not because there are no capable persons to help once they know what to do - but I would find it extremely embarassing. Again, there are emotional problems to contend with of which most non-diabetics are unaware.

I am active with my family and in community affairs. I ride horses, hike and ski, but I want to be free to do these things alone if I so choose. I don't want to be blind or be afflicted with any of the other complications known to touch diabetics of long standing. I have accepted my disability, but I pray to God that my children can escape. To know they too would have to spend their lives not only with a syringe in one hand and their watch in the other but to have to face the severe complications which come to most all diabetics sometime or another would surely break down my years of positive thinking.

I have done all right these 30 years, true, but we all have a right to good health. It has been said the discovery of insulin only delayed a cure for diabetes about 50 years. If we had begun to work towards something better even 10 years ago I might have 2 good eyes today.

The need for a cure goes without saying. A need for an easier and happier life for the Insulin-dependent diabetic is desperately needed. The public must be educated about diabetes, not only of the early detection of the disease and the warning signals but to understand the disease in those already afflicted. The MD and hospital staff nurses should also be brought up to date on the care of a diabetic patient. It amazes me to learn of a doctor who has just informed a patient of their diabetes, prescribes

medication and a vague diet and sends them home. I hope to see more information available to the public and in schools. I want to see that everyone is aware of the facts. Diabetes is not just a matter of watching your diet and taking your medication. It isn't always that simple.

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Testimony Presented to the
National Commission on Diabetes
by: Mrs. Rita Gill

May 1, 1975

TO: The National Commission on Diabetes

As the parent of a diabetic child I would like to share my hopes and despairs with the National Commission. The original shock and feeling of despair on hearing the diagnosis of diabetes in our eleven year old son (who was admitted to the hospital in a near coma) gradually gave way to a feeling of anger at why so little progress has been made in the treatment, diagnosis, and prevention of diabetes.

I made a mental note of thanks to Banting and Best and their medical miracle of insulin as we joined the ranks of the other 750,000 juvenile diabetics in the U.S. But I could not help but wonder why continued research on the improvement of insulin has moved along steadily while research into the causes and prevention of diabetes seems to progress at a snail's pace. How can one answer a child's question "How come we can send a man to the moon and we can't cure diabetes?" Little more than a decade of research and development plus billions of dollars and countless manhours by distinguished scientists accomplished miracles in the space program. Perhaps if the same crash program were applied to diabetes research, prevention and cure would be heralded in less than a decade!

Realistically, with the shock, despair and even anger behind me I find myself looking to the future for my son, our family and the 10,000,000 diabetics in the U.S. We are not asking for the moon! We are asking for a concentrated research program involving all the best researchers, authorities, and perhaps even "dreamers"; we want the best possible facilities and equipment for these people to work with; we need the continued funding and support of the Commission.

I find myself listing several hopes for the future.

1) Find the cause of diabetes and perhaps it can be prevented in the millions who will inevitably get it otherwise.
2) Improve the treatment of diabetes. A lifetime of urine testing and daily insulin injections may be a necessary routine, but there MUST be a better way - something more pleasant and more efficient that will prevent the numerous serious complications that face every diabetic at every age.
3) Improve the detection methods of diabetes to prevent countless lost man-hours and economic loss in medical bills and work time.
4) Ultimately find the cure. As a layperson I prefer the idea of an "islet transplant" to an electrochemical device that would be implanted under the skin.

The birthright of every child is an expectation of a full, healthy, productive life. I want that birthright for my child and for every diabetic child. I am confident that with the brilliant medical talent and twentieth-century technology available in this country, with the continued support of the Commission and the Congress, and the determination of concerned citizens we will conquer diabetes.

Mrs. Rita Gill
Member, American Diabetes Association
President-elect, Robert Nielsen Unit, Washington Affiliate

Testimony Presented to the
National Commission on Diabetes
by: Mrs. Louise Jones

713 East E Street
Moscow, Idaho 83843

To The National Commission on Diabetes:

I would like to speak to you from two different points of view ... first of all as a nurse who lives in a rural community.

Time does not permit me to spell out in detail my role as a health professional involved in the organization and implementation of diabetes classes in our area other than to say I think we failed. Despite enthusiastic response to the classes from diabetics, their families and the medical community, we have had to abandon them because it is not possible to continue a quality program indefinitely which is staffed 100% by volunteers.

The great majority of professionals involved as teachers in our program were employed full-time elsewhere and found it difficult to put a lot of extra time and effort into frequent presentations for us. Those of us who coordinated the classes saw much room for improvement such as greater frequency of meetings -- semi-annually didn't meet the needs. We felt diabetics needed more individual attention than we could provide the six nights we met. And the diabetics expressed a desire for an always-available source of information other than their doctors whom they do not see as someone they can turn to to stay well. Other areas needed improvement too but our local doctors wanted us to continue as we had for three years, floating from church meeting-rooms to University classrooms to anyplace else that was rent-free. We did not charge for our classes. They were presented as a public service.

When we suggested to the doctors that the program would have greater continuity if it were housed in a hospital with a permanent staff, we ran into opposition. Our doctors feel Moscow has everything the average diabetic needs; those who need extra are referred to clinics in Seattle or Portland. They expressed a desire to see our classes continue as they stood - as a frill or frosting-on-the-cake as it were.

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Only yesterday the chief of the medical staff at our hospital here in Moscow told me that I'm "thinking too big" when I suggest the community could use a diabetes teaching unit or clinic. He said there are not enough juvenile diabetics to warrant an aggressive, continuing program, and the older diabetic didn't really need it because diabetes is not painful, it doesn't shorten his life-expectancy, and it doesn't call for a change in his life-style.

This pleasant, recalcitrant doctor is no exception. But unfortunately doctors wield powerful influence on lay education and hamstring efforts of other health professionals without even knowing it. The answer to the problem is not in internal pressure -- I've tried. Perhaps the community should try to import an already-knowledgeable medical man who is interested in this field. Or maybe recruiting directly from medical schools where thinking is current and education includes health maintenance as well as crisis-oriented medicine can provide the answer.

This problem must not be unique, but since I live in a rural area I can't see the answer. Perhaps the Commission has suggestions, on how best to serve all diabetics who live away from medical centers designed to help them.

My second and deepest concern is my diabetic daughter who was diagnosed eleven years ago following a bout of the measles. During the early course of her disease, she was evaluated and educated at Joslin Clinic -- the only place of its kind in those days. I was fortunate enough to be able to attend with her, and since then we have moved many times and have been exposed to a hair-raising variety of medical treatment, but today she is probably as well-controlled as any 15-year-old diabetic can be.

She made an interesting observation not long ago though: "Gee Mom, isn't anybody doing anything about diabetes? I'm doing the same thing I did when I was five." She's right about that. The only change in her total management has been a switch from u80 to u100 insulin. If she followed her doctor's orders to the letter, she'd be checking her urine four times a day (which means an exasperating emptying of her bladder eight times to get that second-voided specimen);

She still takes two injections of insulin a day, and more when she's ill; everything she eats and drinks should be calculated and spaced; the food and beverage rituals common in adolescent social life are denied her under threat of guilt feelings and/or damage to her future well-being; and, unfortunately she has experienced the stigma of being "different."

Although we pray for overnight miracles, we really don't expect them. But we would like to ask you to give your strongest support to research which is seeking the cause of diabetes -- the cure is right there in its shadow.

We will wait for this big day, but to make the waiting more bearable, we ask you also to direct support to those scientists who are working on perfecting more sophisticated delivery systems that are designed to make self-management of diabetes simpler and more effective.

I am speaking for my daughter as well as thousands of other young diabetics who stand on the threshold of life with Medical Science holding their futures in its hands.

Louise Jones
4/25/75

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Testimony Presented to the
National Commission on Diabetes
by: Mr. Gordon Tongue

Gordon Tongue
6837 – 50th N.E.
Seattle, Washington 98115

April 19, 1975

National Commission on Diabetes

Ladies and Gentlemen:

This letter is written by an average citizen to encourage a marked increase in support of research and education regarding diabetes.

Mrs. Tongue has been treated for diabetes for over twenty-five years. Apparently its progress has been arrested, but she is using two types of insulin and is on a severely restricted diet. Her condition is continually monitored by her physician. We have just learned that our daughter is also diabetic.

While our doctors tell us that progress is being made continually in the treatment of the disease, they also caution us that diabetic patients can never relax their vigilance. We learn from our physicians that some day there may be a breakthrough which will help to reveal its cause. They keep us advised of improved methods of treatment.

We understand that the research and training in the University of Washington Diabetes Center will be a focal point for additional coordination of intensive research. We join literally thousands of average citizens from families where diabetes is a household worry, in supporting the expansion of the Center in Seattle. We strongly urge the government and others to aid extensively in increases in research and education in diabetes.

Sincerely yours,

Gordon Tongue.

Testimony Presented to the
National Commission on Diabetes
by: Ms. Barbara M. Prater
Dept. of Pediatrics
University of Utah

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The Diabetes Center: A self-care living-in program

BARBARA M. PRATER, R.D.
Nutrition Educator, Diabetes Center, and University of Utah, Salt Lake City

Living with a chronic disease, such as diabetes mellitus, requires personal knowledge of the nature of the disease, as well as acquisition of specific skills for self-care in its management. How is this knowledge gained, and how are the essential skills developed? Monitoring food intake is one ever-present aspect in the daily living of the person with diabetes and frequently involves his family as well. How does the person with diabetes monitor his food intake, or does he consider this of little importance? The use of insulin or hypoglycemic agents is another factor in the control of diabetes. What is the level of understanding regarding the use of these drugs in maintaining control? Diabetes must be lived with daily. What can be done to help persons with diabetes and their families accept rather than deny the disease condition and the way of living it imposes?

The published literature has been replete with admonitions to physicians, dietitians, and nurses that the individual with diabetes most assuredly must be well "taught," in expectation that through such teaching, essential practices would be incorporated into daily living to achieve optimal control. Etzwiler has reported (1) the need for more effective education among patients with diabetes and their families. Additional studies have demonstrated (2) a lack of knowledge about the disease, as well as the methods of management, among health professionals who work with patients with diabetes. In a study to ascertain the reasons for attending Camp UTADA, a camp for diabetic youth in Utah, the children and their parents agree that the most important reason was to meet other young people with diabetes (3). For the children, the second most important reason was to learn about diet. The parents rated learning about diet as third, giving second place to learning to inject insulin.

A survey of agencies in the immediate Salt Lake City metropolitan area traditionally assigned to teach the person with diabetes revealed a lack of structured educational programs available for patients and their families. The greatest amount of instruction was taking place in the busy physician's office.

Although the opportunity for instruction was not totally absent, it appeared to be insufficient. Not finding satisfactory answers to the above questions, an interested trio, two physicians and a dietitian, set out to create a mechanism to improve the level of education in the Intermountain Region offered to people with diabetes.

The project

A project was written stating as the objective: "to improve the health care as well as quality of life for the individual patient with diabetes." To accomplish this objective, consideration was given not only to a course for the patient and a family member, but also a course for a health care team. The two courses run concurrently.

Allied health professionals and students and the diabetic patients attend the same classes. By and large, the content of the classes is geared for the participant with diabetes, but spontaneous questions are welcomed from the allied health participants and students. Registration is limited to six allied health professionals and students a week.

A family member chosen by the participant may also live in and attend classes. A child may be accompanied by father and mother, but more often only by the mother. We have also had grandmothers accompanied by granddaughters.

The central objective stated for the participant in the education program was: "for the participant and or family member to assume responsibility for self-care and to achieve and maintain control of his diabetes mellitus." This emphasis on health maintenance, assumed as an individual responsibility, places a greater burden on the individual with diabetes and therefore necessitates a greater degree of understanding about the disease. It was our basic assumption that by offering a comprehensive learning and self-care, living-in experience, the necessary understandings and skills could be attained and the individual made more self-reliant.

The Diabetes Education Project was funded through the Intermountain Regional Medical Program. The curriculum was first developed and stated in behavioral objectives, after which learning experiences for participants and family members were selected and planned. Facilities were available in a former residence hall for nursing students in close proximity to a hospital where meals could be obtained in the cafeteria. After planning for appropriate classroom space, conference rooms, lounge, and offices, minor remodeling was necessary. In addition, the facility had twelve rooms, each furnished with two single beds which allowed for double occupancy by the diabetic participant and accompanying family member.

Most participants have been referred to the Diabetes Center by physicians, but some have come on their own initiative and requested their physician's approval. After the participant completes the course, a summary evaluation is written and mailed to the referring physician. During each five-day session, held twice monthly, an average of ten participants has attended. Over half have been accompanied by a family member who also attended the five-day course. Since the course began in March 1972, the youngest participant has been three years of age and the oldest, sixty-five years old. Grouping participants according to age, or whether they are or are not insulin dependent, has not been attempted. It has been thought that a heterogeneous grouping adds a variety of valuable interactions to the learning experience. Changes in attitude observed by staff, as well as verbalized by participants, have also been attributed to this method of grouping.

Educational program

It is our practice to start "where the individual participant is" in understanding and carrying out the management of his disease. This requires much individualization in the program. Personal interviews are held with each participant by a member of each profession represented on the team—a physician, a registered dietitian, and a registered nurse. At the beginning, a team is designated for each participant so that consistent follow-through occurs and there is opportunity for developing rapport. The physical examination, participant-physician conferences, individual conferences, and exit conferences are done by appropriate members of his team. All staff members participate in classroom instruction, laboratory instruction, problem-solving sessions, evening discussions, and conferences so that all participants have some contact with all staff members. A multiple-choice examination is given Monday morning and a parallel examination administered Friday at the end of the program.

Details of the program are shown in the daily schedule of the Diabetes Center (Table 1). The items starred are classroom presentations. Educational methods used include films, slide presentations, discussions, problem-solving groups, and demonstrations. A concerted effort has been made to use various teaching methods, in the knowledge that each group includes individuals of varying abilities, as well as varying levels of existing knowledge. Repetition occurs as often as needed to assure understanding. It has been our observation that many questions tend to be repeated over and over. This indicates that the answers were not understood, even when they were repeated.

Patience, time, and repetition appear to be essential for a thorough understanding of the interrelationships so vital to "living with" diabetes. For example, the "pattern" control involves not only insulin dosage, peak action times, and food intake, but also de-

gree of physical activity. This pattern control becomes a "holistic" concept, determined by the influencing factors of insulin, food, and exercise. We have frequently discovered a serious lack of understanding regarding the concept of pattern control and the factors influencing it. We assume that if this can be integrated into an everyday living pattern, much of the "poor" control of diabetes may be alleviated and the so-called "brittle" diabetic can be brought into better control. Episodes of hyperglycemia and hypoglycemia are avoided when food, exercise, and insulin are understood as components of a new life style.

In problem-solving sessions, a group of participants and a staff member discuss selected problems and attempt their solution. These include some problems related by participants and some presented by the staff, ranging from some of the more simple to the complex aspects of managing diabetes. Involvement of the diabetic participants and family members in this activity is perhaps one of the most valuable learning experiences included in the curriculum.

Special activities include an excursion to a supermarket to read labels on "dietetic" foods and interpret their value in the diet. This trip can be made by walking, thus affording an opportunity for physical exercise. Evening activities also include physical activities, such as swimming, volleyball games, tennis

Table 1: Daily schedule for five-day program at the Diabetes Center

time	*Monday*	*Tuesday*	*Wednesday*	*Thursday*	*Friday*
6:30—7:00		urine testing	urine testing	urine testing	urine testing
7:00—7:30		physician-participant conference	physician-participant conference	physician-participant conference	physician-participant conference
7:30—8:00		insulin administration and breakfast	insulin administration and breakfast	insulin administration and breakfast	insulin administration and breakfast
8:00—8:30	registration, room assignment				
8:30—9:00	orientation: introductions, pre-course evaluation				
9:00—9:30		"Pathogenesis and Diagnosis of Diabetes"*	"Nutrition in Control of Diabetes"*	"Prevention of Diabetic Health Problems"*	"How to Live with Diabetes" (panel from selected roster of volunteers)*
9:30—10:00	individual interviews and physical examinations	"Exercise in Diabetes"*	"Foot Care and Health Measures"*	"Impact of Diabetes on Your Life"*	
10:00—10:30		break	break	break	break
10:30—11:00		"Medications in Diabetes"*	"Diabetic Acidosis"*	"Care of Insulin Administration Equipment"*	"Recent Advances in Diabetes"*
11:00—11:30		"Nutrition in Diabetes"*	"Hypoglycemia Identification for Diabetics"*	"Marketing for Food"*	course review
11:30—12:00		meal planning (individual groups)	meal planning	meal planning	evaluation of course
12:00—1:30		testing; lunch	testing; lunch	testing; lunch	testing; lunch
1:30—2:00	"What Is Diabetes?"*	techniques of insulin administration	"Care of Diabetes During Illness"*	"Glucagon Administration and Demonstration"*	team summary with participant and family
2:00—2:30	"Why Nutrition in Diabetes?"*		"Food During Illness"*	problem-solving session	
2:30—3:00	urine testing techniques	pattern control; oral hypoglycemic agents	"Food for Special Occasions"*	excursion to supermarket	
3:00—3:30	break and snacks	break and snacks	break and snacks		
3:30—4:00	participants' recreation and free time; staff conference	participant problem-solving sessions	problem-solving sessions		staff conference
4:00—5:30		recreation and free time	recreation and free time	recreation and free time	
5:30—6:30	testing; dinner	testing; dinner	testing; dinner	testing; dinner	
6:30—9:30	sports and evening activities; testing and snacks	sports and evening activities; testing and snacks	sports and evening activities; testing and snacks	restaurant; testing and snacks	

*Classroom presentations.

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matches, and strolls to a nearby park and rose garden. Certain other sports, such as skiing and ice skating, can also be part of the program in the appropriate season. Educational movies are planned during the later part of the evenings with opportunity for discussion to follow.

Meal planning

The meal plan is individually developed as a cooperative effort between the participant and dietitian. This planning takes into consideration the person, his life style, insulin requirement, availability of food, and other essential considerations. By including the patient in the planning, there is opportunity to teach as well as to insure compliance. With the attitude that he is part of the team and therefore part of the plan, the responsibility to follow this meal plan then becomes his, not the dietitian's or the physician's. With the assistance of a daily planning session with the dietitian, the participants choose their meals from the hospital cafeteria.

We have adopted a food grouping system, "Diabetic—Four Plus One," as explained and illustrated in the booklet, "Food and You—Nutrition in Diabetes" (4). Patients' acceptance and understanding of this system have been good. Although some participants have learned the "Exchange" food lists, they also enthusiastically use the inclusive "Diabetic—Four Plus One" groupings for many reasons, the main one being the greater variety of foods included. The terminology of "choice" rather than "exchange," and "meal plan" rather than "diet" seems to simplify the learning, as well as to promote acceptance. This system appears to assist patients in planning meals and in consuming a consistent, daily food intake according to the daily pattern. Cooperation by the hospital personnel in assisting the participants in the cafeteria has been gratifying.

Perhaps the climax of the week's activities comes on Thursday evening when the entire group, accompanied by a Diabetes Center staff member visits a restaurant for dinner. An earlier class in reading menus and choosing foods for special occasions has adequately prepared the individual for this real-life experience in choosing foods appropriate to his meal plan. The Friday morning panel, "How to Live with Diabetes," provides participants an opportunity to share feelings, attitudes, and experiences with other patients who have volunteered to participate as panel members. A high level of camaraderie develops during the five days as participants share, socialize, and interact, which is particularly evident during this Friday morning session.

Evaluation and future plans

A follow-up evaluation has been designed to take place six months after the participant completes the course to determine the effectiveness of the program in achieving its objectives. There is insufficient data to report at this writing.

However, on cursory examination, the patients' attitudes seem to be measurably altered. Letters from the participants are numerous and in many instances have described particularly difficult situations in which they have managed the diabetes and felt reasonably secure in doing so. A negative attitude toward living with diabetes, due to lack of knowledge and understanding of the disease and its effect on everyday life, can change to one of acceptance and an attempt by the patient to manage the disease rather than allowing the disease to manage him. This "holistic" concept of living with a chronic disease has been made much clearer to us, also, as we have shared the five-day, living-in, self-care experience with our participants. The Diabetes Center program has afforded the staff, as well as students, a most worthwhile opportunity for sharing and "feeling" how it can be to have and to learn to live with diabetes.

After one year, the Diabetes Center has proved a valuable regional community resource in many ways. As its operation continues, it can serve in many more ways by providing a leadership role for further program development. The Center can serve as a facility to train health professionals; to coordinate related activities; to establish a roster of patients with diabetes in the area; to provide leadership for affiliated organizations; to develop detection programs; and to provide accessibility of primary health care for patients in rural communities and Indian reservations. These activities will all have the challenge to insure improvement of health care, as well as quality of life, for the person with diabetes.

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Testimony Presented to the
National Commission on Diabetes
by: Dr. Marvin L. Rallison
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Statement on Treatment of Diabetes Mellitus*
Prepared for the Subcommittee on Treatment of the
National Commission on Diabetes
Seattle, Washington
May 10, 1975

Currently accepted treatment of diabetes mellitus consists of a) instructing the diabetic in the nature of the illness (i.e. how it affects health, lifestyle, etc.), b) regular exercise, c) meal planning to assure intake of the right foods in the right amounts at the right time, d) medications for control of carbohydrate metabolism (i.e. insulin or one of the oral agents), and e) medical followup, including monitoring of blood or urine sugar to help maintain good control of the carbohydrate dysmetabolism and, hopefully, diminish morbidity/mortality from complications.

All of these measures of treatment require a receptive, informed subject. Adequate management of diabetes requires the services of several health professionals working together. Whether treatment goals are achieved depends upon availability of therapy facilities, the state of knowledge of the health professionals and, most importantly, the degree of understanding of the diabetic.

The current state of the art of treatment of diabetes mellitus falls far short of expections, based on what we currently know to be helpful, even in accomplishing short-term goals. Delivery of health care to diabetics is hampered by unavailability of adequate facilities for therapy, lack of communication of information to the diabetic and lack of knowledge of management principles by many health professionals charged with care of diabetics. Deficits in application of present knowledge of management of diabetes arise because a) physicians are inadequately train in ambulatory management of diabetes, b) the role of non-physician health professionals

*n.b. Information in this report is based on experiences gained through operation of an Intermountain Diabetes Center (1971-74) and from experiences shared among pediatric endocrinologists at a meeting of the ad hoc Committee on Juvenile Diabetes of the Lawson Wilkins Pediatric Endocrine Society (March 1974).

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as a member of a therapeutic team is often not recognized or realized, and c) the patient is not given sufficient professional time and attention to master the fundamentals of management which are expected of him as the active member of the therapeutic team.

In the Intermountain West, a population of about 2,000,000 is sparsely scattered through parts of several western states, including Utah, Nevada, Idaho, and parts of Montana, Wyoming, and Colorado. A little less than half of the population is concentrated along the Wasatch Front. A few years ago, we inquired informally among the hospitals along the Wasatch Front about educational programs available to diabetics and found only two with a current operating educational program for hospitalized diabetics. Care was being provided primarily by physicians in their offices and by dieticians in hospitals without much correlation of efforts. Physicians, while trying to provide medical guidance, freely admitted time for education is frequently inadequate. Education of the diabetic was delegated to hospitals, most of whom had no formal program.

Further, in a survey of about 300 diabetics, who were referred to the Intermountain Diabetes Center and were therefore highly motivated to learn more about diabetes, we found 15% had received no information from any health professional, 54% from only one, 20% from two, and only 11% from three or more. Of these same 300 subjects, 60% were judged by examining diabetologists to be in only fair to poor control of their diabetes. In an examination of essentials in management of diabetes given to the 300 diabetics, an average of 48% of the questions were answered wrong. Similar results were obtained in the Midwest by Dr. Etzweiler, showing that both diabetics and nursing and dietetic students had insufficient knowledge about the rudiments of diabetes.

Nearly half of the population of the Intermountain Region is broadly

scattered over a large area. Diabetics in sparsely population areas of this region have little access even to the hospitals which have occasional educational programs. There is therefore a great need for both a concentrated and a dispersed treatment program for improvement of therapy of diabetes in this region.

Although this accessment of need is based on observations in the Intermountain Region, reports from members of the ad hoc Committee on Juvenile Diabetes of the Lawson Wilkins Pediatric Endocrine Society verify that lack of application of current knowledge of therapy of diabetes is rather universal although there are clearly differences in regional needs.

It is clear that to close the gap between what is possible and what is being accomplished in the treatment of diabetes will require improvement in communications to both diabetics and health professionals. Multiple models of health care delivery must be developed and evaluated. Emphasis should be placed on the team approach to health care delivery and the roles of physician, nurse, nutritionist, social worker, and psychologist as well as other health professionals in the care of the diabetic should be explored and evaluated.

To accomplish this regional centers involved in care, education, and research should be established so that all segments of our population may have access to them. Such centers should be staffed by both internist and pediatrician as well as allied health professionals with expertise in dealing with all ages to provide broadest possible coverage for the diabetic. Improved education of our health professionals must be an integral function of regional centers including in-center education of allied health professionals (and school teachers), physician education in ambulatory care of diabetics, hot-line consultation with primary-care physicians, seminars, etc. Through speaker bureaus and other education activities in the community, the center should also provide public education.

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To determine the effectiveness of current or innovative therapy, a monitoring system should be established. It is vital to determine those factors which signify better health for the diabetic and to determine which therapeutic measures provide the diabetic with the best opportunities for continued good health. This goal underscores the need for study of the etiology and natural history of diabetes. We must seek information which may help us influence the natural history of the disease to the benefit of the diabetic.

Newer forms of therapy should be developed and adapted as they become feasible, for example, use of the glucose sensor, implantation of islet cells, etc. Research into new modes of therapy should be encouraged such as study of nutritional needs of the diabetic under variable circumstances, development of better modes of medication, study of psychological impact on treatment effectiveness, etc. The impetus to research arises quite naturally out of participation in innovative modes of therapy. We believe that a team approach to therapy offers not only the best educational opportunities to the diabetic, but is likely to stimulate more interest in and afford a more concentrated broad-based effort in improving methods of health care delivery. Simultaneous medical, nutritional, and pharmaceutical investigation could more easily be instigated if all were collaborating in treatment of the diabetic.

It may seem redundant, but no proposal for care of the diabetic should be considered complete without identification of the scope of the problem. There is a need (as emphasized by the ad hoc Committee on Juvenile Diabetes of the Pediatric Endocrine Society) to identify all diabetics in some sort of national register to enable us to characterize prevalence, incidence and the nature of the disease. Such information would allow characterization of the genetic nature of the disease and lead directly to studies of the etiology of diabetes, which is vital to any program aimed at control or prevention.

Close cooperation between those engaged in research and those engaged in care and education of the diabetic and training of health professionals is essential to accomplishment of treatment goals. This can best be accomplished with the establishment of regional care, teaching, and research centers operating under the "team" concept of diabetes management. Some such centers are, or have been, operating and experience gained from these centers may provide models for development of a network of centers. A model Diabetes Center was established in Salt Lake City about 3 years ago to provide team care of diabetics and team training of health professionals. Attached to this statement is a description of the operation of the Diabetes Center as reprinted from an article published in the Journal of the American Dietetic Association, vol. 64, February 1974. Unfortunately, our center was forced to close in June 1974 because of insufficient funds. However, experience gained in operation of the center in the Intermountain Region proved the desireability and feasibility of a regional center and pointed up the need for both centralized and dispersed care and training efforts.

The Diabetes Center in Salt Lake City pioneered the feasibility of ambulatory live-in care, i.e., the participant lived at the care facility as in a motel-hotel, eating, sleeping and attending classes as a member of a learning group. The team we found most useful consisted of internist, pediatrician, nurse instructors, nutrition instructors, and psychologist. Ambulatory live-in care provided superb opportunities for observation of the effects of daily living pattern on management of diabetes, a situation seldom achieved through hospitalization. The center provided normal, daily activities such as walking, dining out, swimming parties, choosing food in a cafeteria, etc. all under supervision. Ample opportunity was afforded for individual conferences on any aspect of diabetic care, but the psychological boost of living with other diabetics and of discussing problems relating to

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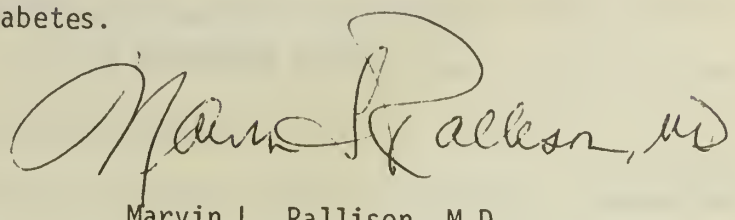
living with diabetes could be viewed as one of the program's greatest advantages.

In some areas, such as the sparsely populated West, mobile clinics and education teams are essential to carry the team concept to primary providers of care. Improvement of delivery of care at the source and providing each diabetic with educational opportunities should be the goal of such mobile clinics. Health professionals can be taught ambulatory care of diabetics best in a practical setting, i.e. either during the live-in classes at a diabetes center or through the use of the traveling clinics. Both provide opportunity to see the diabetic in his own milieu.

Better education of the diabetic (and the health professional) is a sound economic as well as humanitarian goal. It is our hypothesis that better education of the diabetic will lead to better understanding of his disease leading to better compliance with accepted management methods. Better compliance means better control which will be associated with less acute illness and longer periods of freedom from chronic complications. Less illness means more productive lives for the diabetic, less use of medical facilities and obvious economic advantages. This may be simplistic in outline, and some conclusions open to investigative study, but if we are to offer the diabetic any hope of improved health, certain assumptions must be made and progress charted toward our goals. We must, of course, identify ways of recognizing, identifying, and quantifying good health, good controal and understanding of management principles in order to evaluate our progress. This will require long-term pooled information, possibly gathered through a network of centers with close investigative liaison.

We believe the interrelated goals of research and management of diabetes can be optimally achieved through establishment of and support of regional care, teaching, and research centers for diabetics using team-oriented care and training for diabetics and health professionals. This system we feel

will reap rewards in improved health for the diabetics and increased stimulation of research in our continuing search for improved methods of control and prevention of diabetes.



Marvin L. Rallison, M.D.
Associate Professor of Pediatrics
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Testimony Presented to the
National Commission on Diabetes
by: Dr. Jerry Palmer
Department of Medicine
University of Washington

UNIVERSITY OF WASHINGTON
SEATTLE, WASHINGTON 98195

Department of Medicine
Division of Endocrinology

April 23, 1975

National Diabetes Commission

As Clinical Coordinator of the Diabetes Research Center in Seattle and as a Board Member for the Washington Affiliate of The American Diabetes Association, I have had considerable contact with both investigators in the field of diabetes and also with patients having this disease and with their families. It is on this basis that I address myself to the urgency of the situation and the need for an aggressive attack on this disease. I will attempt to emphasize three major areas. Within the past few years several areas of research have shown developments which may soon drastically change the current modalities available to physicians for treating diabetics. I am referring to the work on pancreas transplantation, especially islet transplantation, the artificial pancreas, both of which should completely revert to normal the abnormal carbohydrate metabolism of diabetics. An implantable glucose monitor for precise and easy determinations of blood sugar at any time of the day would greatly facilitate diabetic control with the now available insulin preparations. The possibility that somatostatin by inhibiting glucagon will be an important therapeutic modality for treating diabetics needs much further investigation. In addition, the search for better insulin preparations that do not induce anti-insulin antibody formation and techniques to manufacture these insulins at prices realistic for the many people

affected by diabetes must continue. Basic clinical research addressing itself to the questions of how best to manage the complications of diabetes is necessary. How can physicians better treat or retard the progression of diabetics? In summary much research is needed to find better ways to treat the millions of people who have diabetes.

The second point I would like to make relates to education. Because diabetes is a chronic disease, and at least at present not curable, and affects the day-to-day life of patients we believe that a major factor in improved care is patient education and understanding of his disease. The more patients know about diet, foot care, urine testing, and the effects of such things as exercise and minor viral infections on their diabetes, the more effective they will be in controlling it. In addition, much information about diabetes is available to physicians closely affiliated with a Diabetes Research Program that is not readily available to the average practicing physician. It is necessary that postgraduate educational seminars be held to keep the practicing physicians abreast of the most current therapeutic approaches for diabetes and its related complications.

The third area I wish to emphasize is the need for increased basic research aimed at finding the cause of diabetes. My first two points were directed primarily at finding new and improved ways of caring for the patients who now have the disease, and also the dissemination of this knowledge such that these advances are rapidly made available to diabetics in the general population. The ultimate goal though in this disease should be aimed at finding the cause and thereby allowing us to prevent people from ever being afflicted with diabetes. It is entirely possible that diabetes as we now recognize it, is not a single disease but the end process of multiple inter-related pathophysiologic mechanisms. It is probable that

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we will gradually chip away at various etiologic factors that culminate in the expression of diabetes as we see it now. Research into these questions is now being carried out on the electron-microscopic, molecular and complicated biochemical levels. Integration and coordination of the expertise and techniques of the many investigators now addressing themselves to this problem will certainly greatly hasten the unraveling of this problem.

The initial step by the National Institutes of Health of establishing Diabetes Research Centers should facilitate the coordination and integration of the many people involved in the various aspects of the diabetes research and thereby will provide the fastest solution to this disease. Much has already been accomplished by the Diabetes Centers recently established with the limited funds available. Continued and increased monetary support is urgently needed for these Centers so that they can continue their aggressive attack on this disease.

Sincerely yours,

Jerry P. Palmer

Jerry P. Palmer, M.D.
Clinical Coordinator
Diabetes Research Center

Testimony Presented to the
National Commission on Diabetes
by: Dr. Donald G. R. Blair

To the National Commission on Diabetes

I have been a "brittle" diabetic for 29 years, since the age of thirteen, and currently take sixty units of insulin per day. Professionally, I am a biochemist and have been engaged in basic cancer research for fifteen years. As you know, "brittle" diabetes is difficult to control. Consequently, I have spent considerable time in hospitals for regulation of the disease and of hypoglycemia due to overdose of insulin or excessive exercise. Many diabetics learn to live with their condition, but diabetes and insulin treatment has meant inconvenience, loss of working time, great financial cost, and not least of all - pain.

From the dual role of diabetic and medical researcher, I am familiar with the medical research being done on diabetes. Frankly, it is because of research on diabetes (the discovery of insulin) that I am alive. I wholeheartedly support the expenditure of funds for research on diabetes and hope that this program will continue to be supported by the United States Congress and the American public towards determining the etiology of the disease, improving detection methods, discovering more effective and convenient treatments, and ultimately developing preventive programs. A greater research effort in diseases, such as retinopathy and cataracts, which arise as complications of diabetes, would undoubtedly benefit diabetics.

Yours respectfully,

Donald G. R. Blair

Donald G. R. Blair, Ph. D.
Visting Scholar, Dept. of
Pathology, University of Washington

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Testimony Presented to the
National Commission on Diabetes
by: Mrs. Carol Blainey
University of Washington
School of Nursing

UNIVERSITY OF WASHINGTON
SEATTLE, WASHINGTON 98195

School of Nursing
Department of Physiological Nursing

April 23, 1975

Dr. Oscar Crofford
Chairman, Commission on Diabetes

Dear Dr. Crofford:

I'm certain it is not necessary to apprize you of the large number of Americans afflicted with Diabetes Mellitus. Just as important as these individuals, are the estimated 5 million persons not yet diagnosed. The very nature of this disease requires a great deal of knowledge on the part of the patient for it is he who must take responsibility for the day to day management of this chronic disease.

Increasing public awareness of this disease, early detection and control are of paramount importance in improving care of these patients. These tasks all take time and knowledgeable concerned health personnel. If we are to work toward defining the cause through extensive research, increasing the discovery rate of unknown cases through detection clinics and improving the medical care and knowledge of those afflicted, adequate funding must be provided. Congress and the public should support funding efforts to meet the needs of this portion of our population.

One mechanism for implementing these goals is through the Diabetic Research Centers. One of four supported by NIH has been established in Seattle. As part of my community responsibility as a faculty member of the University of Washington School of Nursing, I have set aside time to be involved with this clinic since January 1975.

Specific activities of this clinic have been: 1) screening people for diabetes; 2) treating those who have diabetes; and 3) teaching individuals who have diabetes how to manage their disease. We have established organized classes to teach groups of patients and their families management of diabetes. In addition, the M.D.'s associated with the clinic have taken time to increase my understanding of diabetes and I, in turn, envision teaching other nurses about diabetes as well as how to teach patients to manage their diabetes.

This is far too important a function to be left to the spare time of a few individuals. Additional funds would allow centers like this to expand all facets of the present programs. In addition, adequate funds could institute additional programs involved in teaching other health workers in an effort to establish similar programs in other geographical areas.

Sincerely,

Carol Blainey

Carol Blainey
Assistant Professor
Department of Physiological Nursing

CB:kk

Testimony Presented to the
National Commission on Diabetes
by: Mrs. Shirley Walker

I have had brittle juvenile diabetes for 15 years that I know of - probably longer and it has been very difficult to control. Because of this, I have been in the hospital many times due to acidosis and coma regardless of how carefully and closely I watched my insulin and food intake, exercise and daily urine tests.

The major problem I have had in the past four years is diabetic neuropathy, mainly in my lower legs and feet. I had periods of remission until April of 1974. From then on I have had constant and severe pain with no remission.

There is no known cure for neuropathy, nor any known treatment. The pain is constant and excruciating, consequently, I am unable to rest or sleep. The skin on my legs and feet is so sensitive to touch I cannot tolerate even the pressure of a sheet. At the same time my legs ache and throb. I have sharp shooting pains down the legs and into the arches and toes of my feet. It is almost unbearable.

Lack of sleep, nervousness, and the pain, affect my appetite, cause nausea, and alter my entire way of life. It is becoming increasingly worse as it is now affecting other parts of my body.

There has to be an answer to this. I do not want others going through this type of perpetual pain. What other answer is there than dedicated research? This takes money. We hope you will help.

Shirley Walker
2506 - 24th West
Seattle, Washington 98199
AT2-1480

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Testimony Presented to the
National Commission on Diabetes
by: Mr. Glen W. Jensen

COURIER-HERALD PUBLISHING COMPANY, INC. Founded 1900

May 8, 1975

The National Commission on Diabetes
Seattle Veterans Administration Hospital
4435 Beacon Avenue South
Seattle, Washington

SUMMARY OF REMARKS

By Glen Jensen

Members of the National Commission on Diabetes:

Everyone testifying here today has a keen interest in bringing about marked improvement in the diagnosis and treatment of diabetes.

There is sober realism in St. Paul's words that: "God hath chosen the weak things of the world to confound the things that are mighty."

I am one of ten million or more in the United States who strive to confound this commission.

None of us here today are dogmatic and all are painfully aware of how many areas of uncertainties exist concerning diabetes.

All the testimony presented to this commission is motivated by the desire for improvement in the lot of the diabetic. Emotion dictates that energy and resources be expended to find the cause and a cure for diabetes. I, too, am motivated by that emotion. However, I feel that this capable and learned commission cannot neglect other areas concerning diabetes. Namely education, detection and expansion of existing knowledge and equipment for the treatment of the chronic complications for those suffering from diabetes. Even if a cure for diabetes were found tomorrow, the work of this commission, though gratifying, would not be complete.

I have stumbled through the years of adolescent diabetes and years of chronic complications from this disease. It is imperative that this commission direct some of its energy and resources toward continuing education and the detection of diabetes for diabetics.

The economic burden for the diabetic and for this country is staggering. The frustration is compounded for the diabetic who looks for factual educational matter and who looks for detection aid for the early treatment of chronic complications.

post office box 167, enumclaw, washington 98022 ★ ★ ★ (206) 825-2555

Summary of Remarks
by Glen Jensen

Medical training along these lines and access to equipment for treatment is sadly lacking in the United States. Granted, major medical facilities are expanding in these areas, but, not all diabetics who need help have access to or even realize that something can be done.

My comments before this commission are drawn from the diary of my mind as a diabetic for over twenty years.

Among the quicksands of opinions and emotions, I hope that this commission will find some firm ground to stand on when they come to that moment of truth - - the actual confrontation with a person suffering from diabetes.

Thank you for your time and consideration.

Sincerely,

Glen Jensen

Glen Jensen
1209 Cole Street
Enumclaw, Wa. 98022

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Testimony Presented to the
National Commission on Diabete
by: Mr. J. Richard Morrow

Community Crime Prevention Program
KIRKLAND POLICE DEPARTMENT
207 Central Way
Kirkland, Washington 98033
206/822-1244

May 9, 1975

Federal Diabetes Commission
& American Diabetes Association
Washington Affiliate, Inc.
1218 Terry Avenue
Seattle, Washington 98101

Ladies and Gentlemen:

This letter will constitute a shortened version of remarks I hope to make in person at your public hearing. I will address myself to three main issues:

FIRST; As a diabetic of 18 years, I find it difficult to express my gratification at the passage of public laws freeing up funds for the diabetes cause. This public recognition of the importance and the impact of the disease is the first of many great strides we will make in our efforts to find a cure. It's been a long time coming.

SECOND; I am pleased at the availability of funds to create and support the sizable research task force necessary to impact diabetes. I have every confidence that with federal funds and local monetary and moral support operated through the efforts of the Diabetes Association, our researchers will ultimately make daily injections and painstaking diet control things of the past.

THIRD; I am deeply concerned that in our rush of pleasure over "nearness of the cure" that we may overlook the necessity of excellent continued care for those who already suffer from diabetes. It is less than three months since the Washington Affiliate created the "Get Up and Live" program to encourage diabetics with years of experience to share their background with others new to the disease. To may knowledge, this program is nearly unique. I do not wish to see this young project too often overshadowed by the more new worthy "breakthroughs" and "clinical revolutions" common to the search for the cure. In my judgement it is absolutely imperative that we emphasize the value of teaching and sharing programs that allow diabetics to make a life for themselves until the ultimate solution to their problem is found.

Contributing Organizations: Cleveland, Cowan & Associates Inc • Greater Kirkland Chamber of Commerce • Kwikset Lock Company
Northwest Locksmiths Association • Pemco Insurance • Safeco Insurance • Unigard Insurance • Washington Federal Savings & Loan

In summary then, I have remarked as follows:

1. I applaud the creation of the Diabetes Commission.

2. I approve of the availability of funding for intensive diabetes research.

3. I seek continued emphasis of the value of training, sharing, and self-help programs to make diabetes bearable <u>now</u>, not tomorrow.

Sincerely,

J. Richard Morrow, Director
Community Crime Prevention Program

JRN:lc

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Testimony Presented to the
National Commission on Diabetes
by: Mr. Leonard A. Haba

To the Diabetes Commission:

Diabetes has been in my family for several generations. My father was diagnosed a diabetic when he was sixty-three years old. My sister became diabetic when she was twenty-five. Two of my four children have the disease - the oldest, Linda, became diabetic when she was two. She is now eleven years old. My youngest son, Mathew, became diabetic when he was three. He is now four years old.

Being aware of the disease and its complications has instilled in me the urgent need for research. Sufficient research so that a cure can be found or at least help in combating the complications that often accompany the disease. The scope of research that is needed cannot be done only with private funds. We need vast amounts of government money to make the research efforts meaningful and timely.

I inquired at HEW office, Senator Magnuson's office and another well-known senator's office to assist me in finding out how much money did the government provide the last couple years for diabetes research. The reply I received averaged from a 4 million annual contribution to somewhat over 12 million. Whatever the amount is, it certainly is not adequate after knowing the time and wages and medical expense people have endured to treat their disease. To think that our National Budget is somewhat over 350 billion dollars, our government can only allocate such a small amount to a disease that has effected over 10 million people.

Yes, research should be our primary objective. However, being associated with the Washington Affiliate of the American Diabetes Association, I also see a great need in the Education and Detection fields.

Last year our local Association tested approximately 2,800 individuals for diabetes. These people were pre-screened before we tested them. Our results indicated that approximately 10% of those people tested had abnormal blood-sugar levels and were in the suspect range. We have referred them to their own doctors. This year, if our local funds hold out, we plan to test approximately 6 thousand people. At this level of testing, we probably could test everyone in Washington State who had at least two of the warning signs of diabetes, by the year 2000. This sounds ridiculous, however, the need is certainly there and should be taken care of.

Our local unit is also trying to bring about public awareness of diabetes. We are striving to develop a program to help the diabetic, especially the newly-diagnosed diabetic (or their parents) to live a better life in spite of the disease. This program we will call "Get Up and Live." We also need more diabetic classes on the diabetes complications, the diabetic diet, and so forth.

I know the need is out there for in a span of six months our local Association has grown from two units to sixteen units. They are asking for information such as speakers and films. As a matter of fact, on our way back to New York for the annual meeting of the ADA, our local director and I plan to stop off in Toronto, Canada to view and copy some of their excellent films on diabetes that they have in their library. We have not yet found such a library of films within the United States.

We can't do all of this with only volunteers and the little private funds we can collect through fund-raising projects or otherwise. The time has come that we recognize diabetes as the time and people killer as it is

The general public should be informed and our Congress should also be informed so that we can plan (primarily through Government money) on a well-rounded and planned program for Research, Education and Detection of diabetes. All three goals are important and all should receive recognition when public funds are allocated.

As a layman, I will not try to ascertain in what avenue our research projects be directed. However, State Diabetes Associations, such as ours could be one of the outlets for the Detection and Education programs.

Let the general public be heard and let's act on their recommendations.

Leonard A. Haba
6531 82nd Avenue S.E.
Mercer Island, Washington 98040

President,
American Diabetes Association,
Washington Affiliate, Inc.

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Testimony Presented to the
National Commission on Diabetes
by: Mrs. Larry Nelson, President
Juvenile Diabetes Foundation
Spokane County Area Chapter

I Introduction
- A. Insulin use-Juvenile Diabetes
- B. Juvenile Diabetes Foundation established in 1970
  1. Purpose
  2. Goals

- C. Statistics
  1. Incidence rate
  2. Service & educational needs through teachers, nurses, etc.

- D. Progress
  1. Parental training
  2. Services offered
  3. Informational publications
  4. Educational groups

- E. Objectives
  1. Funds for research
  2. Public relations & information
  3. Accurate statistics on incidence, age, geographical locations, etc. by survey

  4. Establish relationshipbetween diabetes & other diseases
     a. blindness
     b. heart failure
     c. kidney failure
     d. hypertension
     e. arteriosclerosis
     f. neurological problems
  5. Prevention through statistical facts-diabetes as well as other major diseases
  6. Federal funding for specific <u>research</u> allocations
  7. Establish a Central Administration Diabetes Agency
     a. coordination of education research & treatment plan
        1. patient care
        2. consultation for medical personnel involved
        3. out-patient care
        4. instructional service to patients, families, etc.
        5. re-education of doctors, nurses, dieticians, teachers, etc.
  8. Training grants for:
     a. specialists & clinicians
     b. development of educational materials.
     c. psychological counseling for complex adjustment difficulties
     d. special training for very young diabetic families

- F. Conclusion

JDF does not want grants in aid from the federal government but funding for research programs.

CASE I

Linda - Age 28 years old
Juvenile Diabetic 18 years

Now legally blind - unable to inject her own insulin

Never able to carry children full term

Unable to adopt children because of condition

She averages 10-12 hospitalizations a year for infected cysts and abscesses, has bursitis severely - has been treated by several doctors for stabilization of her diabetes - has had several insulin shock seizures requiring hospitalization because of her injuries occurring during her seizures.

CASE II

Linda's Brother - David - Age 20
Diabetic 8 years

Has nearly died 3 times from diabetic coma - will not accept his disease - high school drop out - out of control - but will not accept help.

CASE III

Tom - Age 17 Years
Diabetic 6 years

Now having serious eye problems from diabetes

Senior - outlook and attitude appears good but has refused to wear proper identification up until counseling - wants to be a dentist - but will he see long enough to become one - will he be abl<u>t</u> to qualify for dental school because of diabetes

CASE IV

John - Tom's brother - Age 13 years
Diabetic 3 months

Still requiring regulation but outlook and environment helpful with brother's support. Family has 7 children - husband and father is janitor - what will happen with the other 5 children?

CASE V

Jo Ann - Age 32 years - blind
Diabetic since age 3

Died last fall - complete renal failure - death ensued after several months invalid care.

CASE VI

Jo Ann's daughter - Age 12
Diabetic 4 months

Now diabetic - what must this child think?

CASE VII

Bert - Age 20
Diabetic 4 years

Sight failing - but continues studying - sophmore in college - denies serious involvement with a girl because of diabetes - outwardly blames mother for his disease - wants better odds for productive life

CASE VIII

Jim - Age 36
Diabetic several years

Died last winter after complete extended care - left 2 children and wife

# # #

RESOLUTION submitted by Evalyn Nelson, #1293 University High PTA

WHEREAS, The Washington Congress of Parents, Teachers and Students in 1974 passed a resolution to make the public aware of the vast problem of juvenile diabetes and the need for more ongoing research, and have since implemented it in the State of Washington.

NOW THEREFORE BE IT RESOLVED, That the WCPTSA submit to the National Congress of Parents and Teachers a resolution asking that body to recognize the increasing incidence and problems of Juvenile Diabetes and the need for education and research into the cause and ultimate cure for the malady.

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Testimony Presented to the
National Commission on Diabetes
by: Mrs. Joan Dunn

Joan Dunn
755 N. Collins
Spokane, Washington 99216

As a mother of a toddler with Juvenile Diabetes, our concern with Randy's future is so gravely important. At this time, there is no life insurance available for his age level, schools are grossly unaware of his needs during school days, he can live an essentially productive life until one of the complications hits. As parents we can cope with the life insurance inavailability, we can teach his teachers his needs and help him to put forth his greatest effort to insure a productive life.

But how can you ignore a person in good diabetic control, going blind, having kidney failure, stroke or heart problems? Sure, it's easy to say that these things may never happen - but with the percentages so much higher in people with juvenile diabetes, we <u>can't</u> risk the maybes.

Diabetes research has to be funded and <u>now</u>. Let the established centers go on with their work, their projects are so promising. Money is so vital to <u>research</u>, the local groups could handle more of the educational and actual care support of the children and adults with juvenile diabetes.

Please let your commitment be to the millions of affected people, to cure this disease. It can be done - you'd not only be helping those affected but with increased incidence, you are helping yourselves!

Testimony Presented to the
National Commission on Diabetes
by: Mrs. Richard Whipps

May 7, 1975

To Whom It May Concern:

I am firmly convinced that as much of the money designated for diabetes be used for research!! Because of the serious complications arising from the disease, I feel that just controlling the disease is not enough. Even with good control, many times complications can't be avoided. It is essential that a cure be found! I know what a diabetic's life is like having been an insulin dependent diabetic for ten years.

Sincerely,

Mrs. Richard Whipps
Spokane, Washington

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Testimony Presented to the
National Commission on Diabetes
by: Mr. & Mrs. R. L. McCaslin

May 8, 1975

Dear Sirs:

The time, expense and distance prevents my presence at this most important hearing concerning Juvenile Diabetes.

As a parent of a diabetic, I am forever adjusting priorities, therefore, I feel a written statement expressing my thoughts through our chapter's representative is the next best thing to being there in person.

Our son has had diabetes since he was 10 years old and is now 17. He has learned to control his disease and is relatively healthy. Our deep concern is of course the many related diseases that he has to face in the future.

We are hopeful that research will provide some of the answers and want the monies for research used for that research, not the administration of it.

Thank you for listening to one more plea for research funds and the plea for improved health for our young diabetics.

Wanda McCaslin

Mr. & Mrs. R. L. McCaslin
S. 2520 Timberlane Drive
Veradale, Washington 99037

Testimony Presented to the
National Commission on Diabeted
by: Mrs. Ann Kennaly

My name is Ann Kennaly. My husband Gary and I are parents of four young children. Two years ago this September our baby girl, then 10 months of age, nearly died in a diebetic coma. The rapid onset of this disease and its severity are still hard for us to comprehend.

We urge the Commission to direct every possible penny of the federal funds provided through the Diabetes Mellitus Research and Education Act into research. Many promising research projects are already underway, and with adequate funding researchers will be able to continue their studies.

We know the devastating complications which diabetes often brings about. The thought of our beautiful little two-year-old becoming blind or being struck down with kidney or heart disease in the prime of her life some 15 or 20 years from now is appalling to us. Through the Juvenile Diabetes Foundation we are doing what we can as individuals NOW to stem this possible consequence. We urge you to act NOW, too, to fund as much research as possible to save our little girl as well as the millions of other people who are afflicted with diabetes.

Education of the diabetic is an important aspect too, but through organizations such as the Juvenile Diabetes Foundation and the American Diabetes Association we feel such vital education can be predominantly funded and administered on a local level. We are succeeding well in this regard in the Spokane area. We don't mean to minimize the importance of diabetic education, but to fund the important but expensive research grants is a stumbling block to us.

Therefore we urge the Commission to direct all available federal funds into established research studies as soon as possible. To work locally on education and nationally on research seems a sensible and effective way to attack this disease and provide help for those people already affected by it. Working together--the American way of getting things accomplished--can make diabetes a thing of the past.

As concerned parents, we thank you very much. Mrs. Ann Kennaly

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Testimony Presented to the
National Commission on Diabetes
by: Mr. Tim W. Anderson

NATIONAL COMMISSION ON DIABETES
May 9 and 10, 1975
Veterans Administration Hospital
Seattle, Washington

TO: National Commission on Diabetes - Oscar Crofford, M.D., Chairman

FROM: Tim W. Anderson, 509 Potter, Bellingham, Washington

There are many misunderstandings and confusing matters concerning diabetes. There is a general public fear - mainly of ignorance concerning the diabetic and his length of his life. I'm convinced that I will probably live as long with diabetes as I could without it, for the simple reason that since my diagnosis of diabetes I have learned to care for my body and to become more aware of its limitations. I have no regret of its effects. Of course, there are times I feel confined, but these bounds are set more by people and societies which have these short-sited views of my conditions. I feel these attitudes and prejudices cover in most cases unjustified. Although diabetics do fit into certain physical risks areas, we are all individuals and thus have to be judged as such. We as human beings each have our own handicaps, whether they are physical, spiritual, mental, or whatever. A strong independent person will learn to work within these limitations and most likely use the experiences beneficially, he baces to channel them into constructive endeavors.

To the point of special funds, my view is greatly prejudical by my own desires and personal wishes. As a young man living a basically normal life which includes diabetes mellitus, I have the general same wishes and plans as any other American male. This could possibly include a wife and children at some time. Yet, it is obvious to you and myself that diabetes is heriditary. I have been able to personally overcome all the problems I've come into contact with as a diabetic. I've learned to climb mountains, play many sports and to basically not only accept my conditions but to use it for direction in my life. Yet this problem of heridatary interaction really slows and hampers some of my own personal wishes and plans. If I could have my area of interest to pick for receiving Federal Funds it would be in finding the exact cause of diabetes and to elliviate the problem before birth of the prospective diabetic. As a potential father and as a human being I can't put another life into this world knowing it might be hindered or handicapped before hand. That problem has riddled my mind for years and I truly believe in what I am writing. We definitely need to isolate the cause and work to find the solution to prevent diabetes - not just maintain it. I want my children to be free from diets and needles and little vials which they must face daily. I've been lucky, I've adjusted easily and by the grace of God I've yet to have any complications. But still, I know they await and I'm still aware of the daily injection and those social prejudices diabetics all must live with. I also know that I don't want these things for my children and until they can be illiviated there will be none.

Testimony Presented to the
National Commission on Diabetes
by: Ms. Angelina Boese

May 6, 1975

Dear Jim,

Here's a few paragraph's stating how I would like the money spent. For better education and for more research.

I dealt with diabetes since I was eighteen years old. I had married a diabetic when he was twenty-one, he had diabetes since he was twelve. As I was married to him I realized I looked to physicians for guidance, but the responsibility from day to day management rest on our own shoulders, and trying to do best possible for what had happen to us. How much easier and simple it would be if they could get help for people that have to live all their life on a schedule and only when they want a chance to live a normal life without the needle to survive.

My husband died at the age of thirty-one of 1964 with the complications of diabetes. Our baby was only two months old when all this happened. Three years later he developed brittle delinquent diabetes. Today we are still suffering with it, as many others are. He is eleven years old today.

It is a twenty-four hour job to try to keep them controlled, besides trying to keep a sensible head, and take care of everything else.

I pray we can get support to help them. No one knows but the person that has to watch a husband and a child die

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slowly and your heart goes for them. There must be something for them to make it more easy and bearable for the suffers of diabetics.

I do know our first responsibility is to research for I know without the patience they cannot learn more about it. My own self urges to them and encourage their hopes for a better life.

Instead of my boy playing and learning things of other nature of his growing years which would be three to six, we live in clinics and hospitals for better control of his illness. He had missed the most important years as a normal child. Many incidents happened to keep them going, when times I saw they have given up, when complications set in, and a fighting battle for the doctors to keep them alive. I know it has to get worse before things can get better.

So please I beg as I never begged and urge for help and support for the beautiful people that God has created.

Sincerely yours,

Angelina Boese

Angelina Boese

jb

Testimony Presented to the
National Commission on Diabetes
by: Ms. Ruth Boyle

NATIONAL COMMISSION ON DIABETES
May 9 and 19, 1975
Veterans Administration Hospital
Seattle, Washington

TO: National Commission on Diabetes - Oscar Crofford, M.D., Chairman

FROM: Ruth Boyle, 9332 45th S.W., Seattle, Washington

This concerns my thoughts on use of funds to be provided under the National Diabetes Act.

I have been interested in diabetes since my 17 year old brother developed it in 1923 and lived on the verge of a coma for 2 - 3 months until the first insulin arrived in Spokane in the spring of that year. I then saw the miracle produced by the research which resulted in insulin. I myself was diagnosed diabetic in 1952 and have been on insulin since then.

I think the main thrust should be toward basic research into the causes of diabetes. Some funds probably should be spent to establish some way of diagnosing and educating patients, and of educating parents, teachers, and others involved.

As Lewis Thomas says in his Lives of a Cell, "It is when physicians are bogged down by their incomplete technologies, by the innumerable things they are obliged to do in medicine when they lack a clear understanding of disease mechanisms, that the deficiencies of the health care system are most conspicuous. If I were a policy-maker, interested in saving money for health care over the long haul, I would regard it as an act of high precidence to give a high priority to a lot more basic research in biologic science."

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Testimony Presented to the
National Commission on Diabetes
by: Ms. Janet Brock

Ms. Janet Brock
416 Sterling Street
Sedro Woolley, WA 98284

STATEMENT TO NATIONAL COMMISSION ON DIABETES

1. Contact care....ZILCH! Hospitalized, they teach only what the essential needs are at the time. From then on it's read this ect. ect., and learn! (How?) Specialist, diabetic Dr., (to learn how to care for one's own problem on diabetes, to learn proper ways for health, diet, ect.) Dr.'s conclusion for problem is read this book and follow instructions carefully and come back when you're through so he can find out what you learned....which is zilch! (How can you learn from something that a person does not understand?) How can one learn from a book on the care and health when he or she doesn't even know enough about their own diabetes to understand?

2. You try another Dr.... one after another.... you get the same thing or conclusion from each one....read this, or follow this carefully. (How?) My conclusion is teach myself. Maybe it's all wrong in a Dr.'s eyes....but how else can I learn....besides the hard way? Twenty years old and I have a hard time understanding a child's edition on the care of diabetes....the do's and don'ts.... how and how not to. People try to help you, but they don't understand themselves. You go back to some Dr. He says (go to a clinic or school and stay and learn). How do you fit 9 1/2 years of not knowing anything on how to take proper care of yourself and still be able to live, in just 1 or 2 weeks at a clinic?

3. The schooling costs money. The person has to live with this disease or die. Right? How does the person, who does not have the money for this schooling....or doesn't know anything on how to live with this disease expect for what the nurses showed you in the hospital at the time of this discovery of being a diabetic (which was in my case). Give her an orange to practice on for my shot....and a bunch of books on how to diet right....only so many calories per meal. (All this means nothing to me because I don't understand any of it. For 9 1/2 years it's been take your shot once a day, eat your meals, and try to do what you think is right, (whether it is or not), that is the only way I know how. If the person can't afford the schooling, or can't understand most books, phamplets or what-have-you. Dr.'s, not all, but ones I have been to, don't seem to want to take time to teach you the right way. They keep on saying (You're doing it all wrong. Either do it the way the instructions were written, and stick to the diet....and ect.) or you're going to die. How in the hell can I do this the right way and yet live a longer and normal life if I either can't afford the schooling to half-way learn what I'm doing wrong.... and when no one takes time to teach me the proper way, or do....I just go on as I have for this many years....and slowly die....or maybe get down on my knees and pray for an answer? "(There again is the question on what to do!)"

For all I know, you don't or who-ever, will not understand this so-called letter... but this is the way and the only way I can explain it. I'm not dumb....I can

do many things and have the determination to do much more, but when it comes to my diabetes, I'm just like a six year old trying to learn how to read my first book on See Jane Run or Dr. Suess. For 9 1/2 years it's been what to do, what to do! My solution has been and probably will be the same for years to come, (if nothing else), is to live each day as I have and keep on smiling and hoping! "(What can I say?)"....Except that I want to live and learn....But I need help--and bad. Do I, or does this letter make any sense to you as a person. Or does it sound like a bunch of babble from someone who doesn't know what they're talking about? I wrote this just as it was in my head. Thank you for at least reading it. It makes me feel a hell of a lot better in some ways.... More than anyone will ever know. Thanks again for your time.

May 9, 1975

LIBRARY U. OF I. URBANA-CHAMPAIGN

Testimony Presented to the
National Commission on Diabetes
by: Mr. & Mrs. Lee Cayton
American Diabetes Assoc.
Washington Affiliate, Inc.

NATIONAL COMMISSION ON DIABETES
Veterans Administration Hospital
Seattle, Washington
May 9 and 10, 1975

TO: National Commission on Diabetes - Oscar Crofford, M.D., Chairman

FROM: Marcia and Lee Cayton,
% The American Diabetes Association - Washington Affiliation
1218 Terry Avenue
Seattle, Washington 98101

Concerning the matter of how the pending research money allocated by Congress should be spent, it is our recommendation the money be spent for research.

Being the parents of a twelve year old son with diabetes, you surily can appreciate our concern that a cure for diabetes is our number one priority.

Detection and education are important, but lets find the cure for this dreaded disease first. Once the cure is found, then spend the funds for detection and education.

Testimony Presented to the
National Commission on Diabetes
by: Mr. Mike Clemenson

NATIONAL COMMISSION ON DIABETES
May 9 and 10, 1975
Veterans Administration Hospital
Seattle, Washington

TO: National Commission on Diabetes - Oscar Crofford, M.D., Chairman

FROM: Mike Clemenson, 7318 Phillips Road, Tacoma, Washington

We are sorry to miss the meeting, but it is very gratifying to realize that all steps are being taken (legal and social) to help detect and control diabetes.

We know that a program that helps a diabetic to adjust and lead a normal life would be easier if family, friends, and communities were better informed.

The diabetic's life would be more meaningful, knowing people care enough to have an extensive research program.

LIBRARY OF U.S. DEPARTMENT OF HEALTH

Testimony Presented to the
National Commission on Diabetes
by: Mr. Jack F. Flynn

NATIONAL COMMISSION ON DIABETES
Veterans Administration Hospital
Seattle, Washington
May 9 and 10, 1975

TO: National Commission on Diabetes - Oscar Crofford, M.D., Chairman

FROM: Jack F. Flynn
1414 East Harrison
Seattle, Washington 98102

Please pardon the poor writting, my eyes are very bad due to poor treatment at the V.A. Hospital in Seattle. I was in the V.A. Hospital for a cataract removal. That surgery was a complete success. The only trouble was the lack of knowledge by the V.A. doctors of how to treat a diabetic patient. A nurse always injected insulin every day but did nothing to me about my intake of protein, carbohydrates and fat. As I recall my experiences there I imagined almost every night that I was in some old castle and trying to get out.

I also recall very good treatment by two young "black" aids bringing me out of a "coma".

The hospital knew they were mistreating me because one morning, without a word to me they just called a cab and sent me to the Seattle Convalesence Center. Which is now "Hillhaven".

I have not been able to walk without a cane and very awkard.

On top of everything its been very costly.

Testimony Presented to the
National Commission on Diabetes
by: Mr. D. Robert Hayward

Pacific First Federal
Savings and Loan Association
1310 Fourth Avenue, Seattle, Washington 98101, 682-5811

April 17, 1975

Dr. Keatha K. Krueger
Executive Secretary
National Commission on Diabetes

Dear Dr. Krueger:

Mrs. Hayward and I have two diabetic sons and we are vitally interested in the current and projected research programs.

Since moving to Seattle four years ago, Dr. Williams and his staff at the University of Washington Hospital, have counseled with both boys.

Jeff is 25, has been a diabetic since age 5, is now married and living in San Francisco in good health.

Tom is 23, has been a diabetic since age 13, is in law school at the University or Puget Sound in Tacoma.

Both the boys and their mother achieved an early understanding of diabetes and its control through insulin and diet. They have been excellent patients and have respected and observed the regimen necessary. Tom managed to play high school and college footbell as a diabetic before a knee injury stopped that activity.

As a family we are well acquainted with Dr. Williams' and his staff's current projects, as well as the national reputation their work has brought them.

We know a bit about the work of the Salk institute in the pituitory research, and their cooperative effort with the Williams program.

So in essence, Dr. Krueger, I am saying with our awareness, our experience (good for the most part) and our compassion for our sons' plight - diabetes should command as much support as it can possibly have.

WASHINGTON: SEATTLE, TACOMA, BELLEVUE, AUBURN, LAKEWOOD, BELLINGHAM, LONGVIEW, SPOKANE VALLEY, VANCOUVER / OREGON: PORTLAND, EUGENE, SPRINGFIELD, BEND

LIBRARY U. OF I. MEDICAL CENTER

April 17, 1975
Dr. Krueger

The Diabetes Center concept as developed by Dr. Williams should be expanded and supported in any and every way possible.

Please accept this as my statement to your Commission. Our family is coping with the problem admirably, but we pray for a cure for our sons, which in turn will keep other fine young men and women from a similar experience. The Research Institute is the vehicle to get us there.

Very truly yours,

D. Robert Hayward
Vice President

DRH:vr

Testimony Presented to the
National Commission on Diabetes
by: Mrs. June Hicks
American Diabetes Assoc.
Washington Affiliate, Inc.

NATIONAL COMMISSION ON DIABETES
May 9 and 10, 1975
Veterans Administration Hospital
Seattle, Washington

TO: National Commission on Diabetes - Oscar Crofford, M.D., Chairman

FROM: Mrs. June Hicks, American Diabetes Association, Washington Affiliate Inc., 1218 Terry Avenue, Seattle, Washington

When our son was diagnosed a diabetic at 3-1/2 he found this new way of life difficult to accept. I'll never forget a remark he made as we drove home from the hospital. "I want to be the way I was!" he said. Now I couldn't promise him this but I reassured him that one day there would be a better way of managing diabetics - and hopefully a cure!

Our routine hasn't changed much in the past 7 years as far as his diabetes is concerned but he has put forth a great deal of effort in being a typical 11 year old boy.

I would hope the National Commission on Diabetes would examine all avenues to stimulate the exchange of ideas regarding research.

Early detection is another important area. Well staffed and trained detection teams should be working in the community to screen for the unknown diabetic. The Washington Affiliate of the Washington Diabetes Association has had a successful detection program in existance for over a year.

Diabetes is now listed as a major health problem, yet, I don't believe the public is well informed about this disease. Educating the public would be a plus for the diabetic as well as the non-diabetic.

I guess what I hope and pray for is a concentrated effort on everyone's part to make life a little better for our youngsters and all diabetics.

LIBRARY U. OF L. UNIVERSITY OF CALIFORNIA

Testimony Presented to the
National Commission on Diabetes
by: Mr. & Mrs. Bryan Leyton

NATIONAL COMMISSION ON DIABETES
May 9 and 19, 1975
Veterans Administration Hospital
Seattle, Washington

TO: National Commission on Diabetes - Oscar Crofford, M.D., Chairman

FROM: Bryan and Carol Leyton, 3315 129th N.E., Bellevue, Washington

We are parents of a two year old girl who has been a diabetic for one year.

The money should be spent towards effecting the goal of a cure for diabetes or prevention of complications with the emphasis on new developments as pancreatic transplants and the automatic insulin releaser (artificial pancreas).

Testimony Presented to the
National Commission on Diabetes
by: Ms. Sue McAbee

NATIONAL COMMISSION ON DIABETES
May 9 and 10, 1975
Veterans Administration Hospital
Seattle, Washington

TO: National Commission on Diabetes - Oscar Crofford, M.D., Chairman

FROM: Sue McAbee, 1741 Northwest 97th, Seattle, Washington

I am writing this letter as a plea for help. Diabetes has been in our family for generations. I saw my grandmother die from diabetes as well as my brother-in-law, who died at the young age of 31, leaving a wife and two children. My son is a diabetic and what is in store for him? As a mother I'm very concerned. We need money for research here in our state. I know we can find a cure if we set aside money, time, and researchers for this great undertaking. We have to strive to find the answers to this worldwide problem.

My child would then have a life to look forward to, without fear. He would know his children would not suffer needlessly, as he had. The people of this country would be completely in debt to the Diabetes Commission for making this problem a number one concern to the medical profession.

My child is my life! "Please save him."

Testimony Presented to the
National Commission on Diabetes
by: Mrs. Robert C. McLean

April 24, 1975

To the Members of the National Committee on Diabetes

Ladies and Gentlemen:

The frank intent of this letter is to urge your positive efforts toward obtaining financial aid for diabetes research. My interest in this program is a painfully subjective one, since I find myself, at age thirty four, suffering some dismaying complications of this disease.

I was diagnosed as diabetic as a young teenager and for nearly two decades was not unduly put out by the whole affair. About two years ago I suddenly became extremely ill and as a result have lost much of my sight, the proper function of my kidneys and a great deal of my general well-being. Thanks to grim determination and in a large part to the diabetic clinic at the University of Washington, I am still vertical and breathing. But things very often seem to have taken on the aspect of an endurance contest and my world largely resembles a sepia-colored picture puzzle with a large piece missing for the middle.

I am fully aware - in case I sound unbelievably self-centered - that my problems are not unique to me. In fact, the only other member of my family who is diabetic - a young cousin - has fared no better. Last fall, after a long and futile fight against infection, his leg was amputated just below the knee. Then there is the matter of our daughter, a bright and talented young teenager who shows promise of becoming a fine young woman. Our pride in her is understandable tempered by anxiety, since during my fourth month of pregnancy my husband's mother suddenly developed diabetes. Needless to say, with such a background she is a carefully watched child. I would like to hope that there is some assuarnce of a healthy future for her.

Diabetes is not the benign disease of the middle years as it is sometimes pictured. When it strikes the young it is a slow killer, not perhaps as dramatic as some diseases but lethal all the same. I have been told that there are dedicated people in this country who are working towards both a cure and prevention. Such programs require both time and money. Hopefully, providing some of each will mean a better future for many of us.

Very truly yours,

Patricia M. McLean

Mrs. Robert C. McLean
9825 43rd Place N. E.
Seattle, Washington 98115

Testimony Presented to the
National Commission on Diabetes
by: Mr. & Mrs. J. E. Morrow

10041 - 11th Ave., S.W.
Seattle, WA 98146
May 6, 1975

Federal Diabetes Commission
c/o American Diabetes Association
Washington Affiliate
1218 Terry
Seattle, WA 98101

To Whom It May Concern:

We are writing this letter as parents of a 22 year old diabetic. Our young son was four years old - his birthday to be exact - when we took him to the hospital and we were informed that he had diabetes.

A doctor may try to soften those words, but they are extremely frightening and foreboding. How do you continue to live a normal life (yet learn yourself) and teach your child how to live with this disease? This is the most important fact!

There are so many details you're confronted with - learning all you can about the disease; learning how to give injections; being alert to reactions before they happen and how to cope with them. Teaching your child how to take care of himself; selecting the proper foods and the value of exchanges; teaching him to listen to the dictates of his own body and being aware of what it is telling him; teaching him that Diabetes is nothing to be ashamed of; yet, it must not be used as a crutch for sympathy. These details can be so overwhelming unless you're fortunate enough to have a very competent doctor and marvelously understanding wife-nurse such as we were blessed with.

The need for Self-Help Programs are of utmost importance. People need to be able to talk to someone when their child is asking to take swimming lessons, become a scout, go to a friend's party, going to the prom, going to a slumber party, going to camp, playing football, or finding a baby sitter you can trust so that you could have a well deserved night out. Where do you find the answers and how do you handle these day to day problems - not from the pamphlets that you are given. You need to speak with other parents who are facing the same problems or hopefully have successfully gotten through the stage that you and your child are entering.

We feel that the Diabetes Association has made great strides in detection and education as well as fund raising campaigns for research to find a cure. Each of these are extremely important, but we are suggesting that you divide the funds into thirds - Detection & Education, Research, and Self-Help (Diabetic-To-Diabetic) Program. In this way you would be bridging the all-important gap in helping diabetics live until that "Cure" is found. The unlimited numbers of known diabetics and the newly found diabetics would be able to become better adjusted and productive citizens by sharing in a mutual concern.

Sincerely,

Mr and Mrs J E Morrow

Mr. and Mrs. J. E. Morrow

LIBRARY U.S. [illegible]

Testimony Presented to the
National Commission on Diabetes
by: Mrs. Gary Roth

NATIONAL COMMISSION ON DIABETES
Veterans Administration Hospital
Seattle, Washington
May 9 and 10, 1975

TO: National Commission on Diabetes - Oscar Crofford, M.D., Chairman

FROM: Mrs. Gary Roth
9114 Zircon Drive, S.W.
Tacoma, Florida 98498

I am a parent of a ten-year old daughter, who has been a diabetic for two and one-half years. Naturally, I am concerned about her, and am most grateful that something is now being done to help insure her a chance at a better future.

I feel that a public awareness of the facts about diabetes is of vital importance, as too many people today are unaware that insulin is not a cure, or of the serious complications of the disease. As the number of people becoming diabetic expands the three goals of the American Diabetes Association, education, detection, and research must also expand.

As a parent I can only hope, and pray, that a cure can soon be discovered.

Testimony Presented to the
National Commission on Diabetes
by: Mr. George G. Staples

Dr. Robert H. Williams, M.D.
Head, Diabetes Research Center
University of Washington
Professor of Medicine

Dear Dr. Williams:

Nineteen years ago while a student at the University of Washington, I learned I had developed diabetes. For a period of time the diagnosis was difficult to accept. A short time later I attended a diabetic orientation course with my family and later again with my wife. The information we recieved from these classes has been invaluable in our adjustment to the condition. I have had a few minor complications, but it appears that diabetic researchers are on the brink of several exciting discoveries, and I have hope for the future.

I was fortunate to have developed diabetes as an adult. I watched a group of young people at a recent diabetic symposium in Seattle and my heart bled for those children, because many of them may have a difficult time unless research is able to continue to make inroads toward the answers we need. The importance of early detection and the offering of educational classes and material is so important. Also, the extension of recent developments in treatment must be continued to aid these young people. The implants, the transplants and the searching for the basic cause is continually the hope of so many.

I am greatly appreciative of the work being accomplished by the University of Washington Diabetic Research Center in Seattle. I certainly hope everything possible is done to continue the program and to expand in all areas of diabetic research. It appears we are seeing some definite results and these endeavors should be stressed and strengthened.

Sincerely,

George G. Staples

Testimony Presented to the
National Commission on Diabetes
by: Mr. George L. Wherley

Jim Neidigh
American Diabetes Association
Seattle.

2457 S.W. 150th.
Seattle. Wash. 98166.

Dear Jim,

As a potential diabetic, a dieter only, I know I am lucky to be where I am, no medication, no injections, etc., and I particularly feel for the children who have the daily injection routine to undergo. I feel that our major objective is into research of the causes of, and cure for, with emphasis on the hereditory aspects, and with particular regard to children.

Secondly in importance is the need for improved methods of oral treatment and or possibly a vaccine development again with emphasis to children.

Thirdly more education and detection clinics combined, and here I think there could be a great tie in with industrial medical centers or company medical departments.

You may use this letter Jim in any way you consider it helpful.

Sincerely, Wherley.

George L. Wherley.

NATIONAL COMMISSION ON DIABETES

Center for Disease Control
Atlanta, Georgia
July 7, 1975

Public Hearing Number Five

Monday, July 7, 1975

Public Testimony,
Statement Included

Dr. Joseph Wilbur
Mr. Robert Latham
Statement Representing
Christopher Hall
Craig Jackson
Craig Johnson
Taylor Fletcher
Deaver Collins
Pamel Murray
Neil Parnes
Dudley Seaton
Kevin Zirkle
Liz McAdoo
Barbara Shoback
Porter Storey
Vincent Burke
Bernadine Tolbert
John Cobb
Bobby Joe Henson
Tom Rigsby
Stephen Dolgin
Joe Spann
Holly Fritch
Dr. E. Clarence Rice
Ms. Maria Alogna
Ms. Susan Marrash
Ms. Patricia Schultz
Ms. Molly Davenport
Dr. Benjamin D. Saffan
Dr. Eugene Fierier
Mr. Robert Kronowitt
Ms. Roslyn Greenspon
Mr. Ellis Tarsihes
Mr. Wendell Mayes, Jr.
Ms. Diana Camacho
Dr. Morton Waitzman

Mrs. Sara C. Ashcraft
Mr. John Laurents
Dr. Edwin Bransome
Mrs. William C. Davis
Ms. Sydelle Feinman
Mr. Zane Frakes
Ms. Mary Helen Goodloe
Mr. Tim Shelnut
Ms. Molly Davenport
Dr.E. Clarence Rice
American Diabetes Association North Carolina Affiliate (read by John Laurents)
Mr. William Clark (read by Ms. Roslyn Greenspon)
Dr. Kirkwood T. Shultz (read by John Laurents)

Statement submitted without Personal Testimony — Ms. Marilyn Weiser

Public Testimony without Written Statement — Ms. J. Ernest Williams

Testimony Presented to the
National Commission on Diabetes
by: Dr. Joseph Wilbur
Georgia Dept. of Human
Resources

RICHARD M. HARDEN / Commissioner
M. (JIM) PARHAM / Deputy Commissioner

GEORGIA DEPARTMENT OF HUMAN RESOURCES

618 PONCE DE LEON AVENUE N.E. / ATLANTA, GEORGIA 30308

Statement of Dr. Joseph A. Wilber, Supervisor, Adult Health Section, Georgia Department of Human Resources.

Public Hearings on Diabetes
Center for Disease Control
Atlanta, Georgia
July 7, 1975

Current Activities:

Since 1964 this department in cooperation with the Georgia Diabetes Association has coordinated screening of adults for diabetes through public health facilities in Georgia. In 1974, 29,206 adults were screened, 514 (1.75%) were referred for diagnosis and 310 (1%) were confirmed as new diabetics. In the past 10 years approximately 400,000 of the 3,000,000 adults in Georgia have been screened.

For the past six years, two public health dietitians have conducted one-day diabetic training programs for public health nurses and their patients. Approximately 50 such programs reaching 1,000 patients are conducted per year. In both of these activities, requests for services and programs exceed our resources. Both the screening and teaching programs need better and long term evaluation of benefits and effectiveness. Newer methods of screening and teaching are needed.

Current Needs:

1. Coordination of private, voluntary health associations and public health programs in diabetes screening, education and prevention of complications.

2. Studies of long term benefits of screening in defined populations and more screening of high risk groups.

3. Easily accessible and low cost or free health education programs for diabetics in the areas of nutrition, weight control, foot care and prevention of coma and shock.

4. Demonstration programs for physicians, nurses, dietitians and other allied health professionals in modern methods of diabetes control.

5. Diabetes control centers in health departments and/or community hospitals for low cost preventive ambulatory care - particularly in rural areas and small cities where such facilities are lacking and physicians are already overwhelmed with acute care.

6. Training programs for public health and clinic nurses in the long term management of asymptomatic diabetic patients.

JAW:kb

Testimony Presented to the
National Commission on Diabetes
by: Mr. Robert Latham

NATIONAL COMMISSION ON DIABETES

Statement of Robert Latham
July 7, 1975
Atlanta, Georgia

Mr. Chairman, distinguished members of the Commission:

My name is Robert Latham. I am a third year student at Vanderbilt University School of Medicine. Today, I am serving as spokesman for twenty-one medical students from all over the country who are actively involved in diabetes-related research this summer. Because of our interest in diabetes and our concern over problems in academic medicine, we feel it necessary to call to the attention of the Commission substantial deterrents to the development of potential biomedical researchers. Once acknowledging these problems, we request that the Commission act in such a way as to help resolve them.

With your permission, Mr. Chairman, I would like to introduce those students with me today.

Christopher Hall	University of Mexico
Craig Jackson	Nashville, Tenn.
Craig Johnson	Medical College of South Carolina
Taylor Fletcher	Quincy, Fla.
Deaver Collins	Nashville, Tenn.
Pamela Murray	Medical College of Pennsylvania
Neil Parnes	Princeton, N.J.
Dudley Seaton	Case Western Reserve
Kevin Zirkle	Knoxville, Tenn.
Liz McAdoo	Nashville, Tenn.
Barbara Shoback	Rutgers University
Porter Storey	Stanford University
Vincent Burke	Tulane University
Bernadine Tolbert	Howard University

The other students who were unable to be here include:

John Cobb	Buinsville, Ga.
Bobby Joe Henson	Nashville, Tenn.
Tom Rigsby	Clarksville, Tenn.
Stephen Dolgin	New York University
Joe Spann	Jacksonville, Fla.
Holly Fritch	Yale University

Many of the physicians on the Commission attended medical school at a time when Americans felt research was a most respected occupation. The post-war boom to technology and biomedical research introduced you to a new way of

life, full of excitement and accomplishment. At that time, the federal government shared this excitement, and thus appropriated seemingly unlimited funds to biomedical research.

Today's medical student is faced with conditions that are much different than those which the members of the Commission experienced during their training years. For instance, the assessment of the health needs of this country by Congressional leaders has lead to a dramatic change in attitudes of the Federal government toward academic medicine. Now, central figures of authority at Washington seem to be unwilling to appropriate ample funds to biomedical research. Furthermore, federal legislators expect and demand immediate observable results from long range research projects. The inevitable failure of biomedical researchers to meet these extraordinary and unrealistic expectations has, at least in part, lead to the present adverse governmental policies toward research funding.

Today, the on again - off again funding of the individual researcher's activities poses as a major obstacle to the ultimate attainment of his particular goals. In addition, the lack of security which the unstable funds produces within the faculty necessitates that these physician-scientists utilize valuable time in efforts to attain salary and research support. To stifle biomedical research by the continuation of present funding policies is to leave much undone, for many diseases, like diabetes, need enormous aggressive investigation in order to attain a better means of treatment, prevention, and cure.

In addition to hindering the research manpower of today, present governmental policies are also affecting the research manpower of the future. Post-doctoral research fellowships have almost become a thing of the past. This shortage presents a severe threat to the research manpower of the immediate future.

The career choice of many students is affected by teachers with whom they come in contact during their training years. Yet, the acknowledgment of successful research, not student or even patient contact, is the basis of reward within the academic community under the present funding system. Therefore, when faced with inadequate research money, many investigators, perhaps unknowingly, tend to neglect their responsibilities to students and patients. Students thus perceive that researchers are insensitive and disinterested physicians, excessively involved with degrading fund-raising practicies, with little compassion or understanding of human behavior--qualities students hope never to possess.

The decline in the amount of money appropriated to research has also caused the almost total abolishment of summer student fellowships. These fellowships provide students with an exposure to biomedical research, as well as an opportunity to identify and emulate role models with faculty interested in research.

In recent years, the federal government has directed the majority of its attention and support in the area of health to improving the health care services. Recent legislation considered in Congress called for an increased authorization of funds for the National Health Service Corps scholarships, while simultaneously reducing Health Profession Loans. In effect, this would force medical students whose families cannot meet the financial burden of a medical education into governmental servitude, while more economically fortunate, but possibly less gifted students remain free from post-doctoral commitments. This particular bill represents the type of well-intentioned policy our Congressional leaders are attempting to use to meet the present "Health Care Crisis". Unfortunately, this type of policy will quite probably divert some of the more highly gifted minds away from areas of research where their talents could produce even more significant contributions to health care.

Many present day investigators, possibly some of the members of the Commission, never conceived of themselves as being biomedical researchers before entering medical school. In the years that followed, they began to realize that only through the attainment of knowledge via research could they personally alter the course of medicine and health. These men naturally chose careers in academic medicine. It is much more difficult today for a medical student to make that same decision. Much can be and must be done by the Commission to insure that the diabetes effort has sufficient qualified manpower to investigate the prevention, treatment, and cure of the disease.

Federal agencies must be made to recognize that it is unlikely that present basic science research will find immediate application in solving medical problems. The progress the scientists on the Commission and others like you make in your individual laboratories has to be and will be used by my generation of investigators to ultimately resolve medical problems, such as diabetes. If my generation is not provided the proper stimulation to pursues academic careers, the accomplishments you make today will be of little benefit to future generations.

In conclusion, we request that the Commission include in its recommendations to Congress that Washington make a long range commitment to diabetes-related research in a form that includes the stable funding of active investigators and research fellows. This support would improve the security of their positions, free these people to aggressively pursue their interests, and stimulate potential physician-scientists to engage in diabetes-related research. In addition, funds should be made available to students for summer research endeavors in the laboratories of these investigators, thereby establishing the foundation for the acquisition and dissemination of knowledge and health for the future.

Vanderbilt Diabetes-Endocrinology Center

SPECIAL SUMMER STUDENT RESEARCH PROGRAM IN DIABETES - 1975

Bob Latham
2614 Belcourt Avenue
Nashville, Tennessee
Vanderbilt
Class of 77

Craig Jackson
413 Capri Ct.
Nashville, TN 37209
Vanderbilt
Class of 79

John Cobb
2610 Starling St.
Buinsville, Georgia
Vanderbilt
Class of 78

R. Deaver Collins
5830 Hillsboro Rd.
Nashville, Tennessee
Vanderbilt
Class of 78

Taylor Fletcher
419 N. 14 Street
Quincy, Florida
Vanderbilt
Class of 78

Neil Parnes
256 Russel Road
Princeton, New Jersey
Vanderbilt
Class of 78

William Joe Spann, Jr.
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Jacksonville, Florida
Vanderbilt
Class of 78

Kevin Zirkle
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Knoxville, Tennessee
Vanderbilt
Class of 78

Liz McAdoo
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Testimony Presented to the
National Commission on Diabetes
by: Dr. E. Clarence Rice

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June 23, 1975

Oscar Crofford, M. D.
Chairman
National Commission on Diabetes
c/o Mr. Victor Wartofsky
Information Officer
NIAMDD
National Institutes of Health
Room 9A04, Building 31
Bethesda, Maryland 20014

Dear Doctor Crofford:

This communication is sent to you because of my interest in the work of the National Commission on Diabetes. I am a member of the Board of Directors of the Washington, D. C. Area Affiliate of the American Diabetes Association. My thoughts as expressed in this letter are based on over 50 years of interest and participation in the teaching of diabetes and its treatment. This includes my experience in the treatment of several hundred juvenile diabetics through my association with the Children's Hospital National Medical Center of the District of Columbia.

I have observed the effectiveness of dietary therapy in the treatment of diabetes prior to the use of insulin, the extension of the life span and normalization of life through the use of the latter and the usefulness of the oral hypoglycemic drugs. I fear that much of the value of the sulfonylurea drugs is being lost due to the careless manner that it is often prescribed. Too often the newly discovered diabetic is given a prescription, a diet sheet and very little additional information and help for the years of treatment ahead. Many physicians do not know or appreciate the difference between the juvenile and the adult onset diabetic and few have the patience or willingness to treat the young diabetic during early life and adolescence with its trials and tribulations. As a result there is a shortage of physicians who are capable and willing to treat the young diabetic.

Many hospitals do not provide adequate instruction for the newly diagnosed diabetic and as a result they are discharged without sufficient knowledge or understanding of what is required of them for their own protection. Many communities have few or any facilities for the adequate instruction and treatment of the indigent diabetic. The more affluent who realize that they should be getting better diabetic care find it difficult to discover a well trained diabetologist with adequate laboratory facilities. My past experience as Executive Director of the Washington, D. C. Area Affiliate of the American Diabetes Association would make me agree with the statement of a well known diabetologist to the effect that"diabetes is probably the worst treated of all of the diseases."

I hope that it will be possible for the Federal Government to support the establishment of diabetes centers, where physicians can receive short and long term instruction in the treatment of diabetes and that special emphasis on the training of the juvenile diabetic would be given. Dietary instruction should be stressed as basic in the treatment. The center should be a center for research in diabetes.

The support of long term research in diabetes to find the causes of the disease and the complications which are responsible for the vascular damage associated with it should have high priority in the apportionment of funds, however, the fact that relatively few diabetics are receiving adequate treatment at present makes it imperative that better care be given to them and that persons in all economic levels be able to receive proper care and instruction.

Sincerely yours,

E. Clarence Rice

E. Clarence Rice, M. D., F.A.C.P, F.C.A.P.

Testimony Presented to the
National Commission on Diabetes
by: Ms. Maria Alogna
Emory University School
of Medicine

AMERICAN NURSES' ASSOCIATION

STATEMENT TO THE NATIONAL DIABETES COMMISSION

July 7, 1975
Atlanta, Georgia

Mr. Chairman, I am Maria Alogna, a registered nurse in the Diabetic Day Care Clinic, Grady Memorial Hospital and of Emory University, School of Medicine in Atlanta. Accompanying me is Joan Naylor, Executive Director of Georgia State Nurses' Association. I am here today, representing The American Nurses' Association to speak in support of expansion and coordination of programs of patient, professional, and public education and their evaluation, a data bank on diabetes mellitus and its management, and research in basic sciences and approaches to the diagnosis, management and prevention of diabetes mellitus.

The American Nurses' Association is the professional organization of registered nurses in the United States. The American Nurses' Association represents 200,000 registered nurses, the largest group of health professionals. Its purposes are to foster high standards of nursing practice, promote the professional and educational advancement of nurses, and promote the welfare of nurses to the end that all people may have better nursing care. These purposes shall be unrestricted by considerations of nationality, race, creed, sex, age or socio-economic status.

It is recognized that nursing is the health care discipline responsible for assisting patients to capacities to care for self. The nurse's role and efforts are directed toward providing the needed assisting actions of teaching, guiding and supporting the individual in relation to self-care deficits determined through the nursing assessment process.[1]

The patient has to learn to cope with the problems which the disease imposes and to carry out those actions required by his disease and the medical plan of

therapy and to incorporate all of this into his pattern of daily living. No matter what his educational background, mental, physical or emotional capacity, he is expected to be a bit of a laboratory technician, a nutritionist, to monitor himself for metabolic imbalance or balance, and to lead a normal life.

According to Etzwiler a survey of twenty-six hospitals revealed that only twelve could identify a specific person responsible for teaching the diabetic. Fifteen had purchased teaching materials and only three had allocated budget-wise teaching programs.[2] All too frequently, patient education may only be the inpatient training provided during the initial hospitalization.

There is a need to consider the emotional outlook by both patient and family following the discovery of this chronic illness. This emotional upset may interfere with learning ability. The need for education and then support, is continuous and not just a "one-shot deal".

Nursing practice, encompasses not only the surveillance of the health state, but its purpose and proper function requires determination of the patients' self-care capacities, and provision of any needed assisting actions to overcome or compensate for self-care deficits and to enhance self-care capacities.[3] Social information helps the nurse understand some of the factors in the home situation which positively or negatively influence self-care. Who lives with the patient? Who will help the patient manage in case of acute illness or inability because of physical defects to handle the therapeutic self-care? What kind of stress factors exist in the patient's life situation? Are there children or other sick adults for whom the patient is responsible? What are the financial resources? Culture practices? This information reflects some of the situations or problems which may have to be dealt with by the nurse toward linking the patient with a more congenial environment.[4]

The nursing system or plan focuses upon the responsibility of the patient in relation to how adequately he manages to follow the plan; his knowledge of this chronic disease; knowledge of his control agent - oral agent or insulin, action, peak effect, and duration of action; the relationship of diet to control; his ability to recognize how stress factors effect his diabetic control status; his performance of urine testing for sugar on a regular basis and more frequently when the need arises; monitoring for signs of hypoglycemia and hyperglycemia; techniques of insulin administration when it is required; and his knowledge of the importance of and maintenance of good general hygiene and health habits, including foot care. Patients are often unaware of any foot problems due to insensitive feet from peripheral neuropathies or because of poor vision. Nursing actions here are one of education of the importance of daily foot care and inspection and, perhaps, in the event of poor vision, teach another member of the family to aid in this function. The nurse may also utilize the services of a social worker of community agency to secure any other home services needed by the patient.

A systematic approach to health care which utilize nurses in both knowledge and skills in helping patients with self-management and providing health surveillance, is one way in which the delivery of health care can be improved.[5] There is a need to have a continuing relationship, continuing education, and periodic assessment for supervision of the patient's management of the disorder.[6] It would seem logical for nurses to take an active part in the design for system of care as well as the health care delivery for groups of diabetic patients. Perhaps we could then be able to define and share techniques for overcoming deficits, for example, clients coming from low socio-economic environment with little or no reading ability; much of the communication and teaching has to be by verbal contact. There is a need to develop material for their level of understanding.

Teaching involves more than exposure to material; it involves participation by the learner - feedback and testing. The system of care then has to be one in which the patient or his family actively engages in his care. If the patient or his family constantly take part during clinic or office visits, it allows for determination of the effectiveness of the material taught as well as provides an opportunity for review in order to further build the knowledge he has. Monitoring over time the changes in the person with aging and the increase in complication rate, with subsequent decrease in capacities to care to self, allows the nurse to develop a substitute care system.

Systems so designed lend themselves to improvement as well as maintenance of quality care to say nothing of the satisfaction derived on all sides by medicine, nursing, and the patient.

In summary, nursing is responsible for assisting patients to capacities to care for self. Nurses are the vital links between medical therapy and patient services, have the most access to individuals and families and have traditionally been facilitators for their entrance into the health care system. Nurses are expanding their roles as documented in Recommendations on Educational Preparation and Definition of the Expanded Role and Functions of the School Nurse Practitioner (addendum I).

ANA has published eight sets of Specialty Standards (addendum II) and will soon be developing Standards of Diabetes Nursing Practice. Also published are ANA Standards for Continuing Education in Nursing (addendum III). ANA has established a mechanism for accreditation of continuing education in nursing and a certification program to recognize excellence in practice. ANA has established definition of terms for practice roles (addendum IV).

ANA, representing the largest health profession, would very much welcome the opportunity to be involved in the establishment of a nursing task force to define the scope of nursing in the care of the diabetic, to define performance criteria (terminal) in relation to specified patient outcomes for nursing, to develop learning objectives for achieving the criteria, to identify educational approaches/methodologies and instructional techniques needed to achieve the objectives (both enabling and terminal) and to identify evaluation procedures and methodologies to determine if objectives have been achieved. Evaluation is glaringly omitted in most current programs to teach diabetics.

There exists in the United States nurses who are providing primary care to diabetics in clinics. There are also nurses with expertise in educational methodologies and evaluation and research in clinical nursing. These nurses are a ready resource to help develop the above mentioned. ANA would be most desirous in helping to identify these expert nurses.

ANA would also like to help develop literature for the public and for education of nurses and patients. ANA would further like to participate in the development of the necessary continuing education programs for nurses.

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Testimony Presented to the
National Commission on Diabetes
by: Ms. Susan Marrash

Distinguished members of the committee, ladies and gentlemen, I am very privilaged to be able to speak before you today.

My name is Susan Marrash.

I am twenty three years old.

I have degrees in Theatre and English.

I am listed in Who's Who Among Students In American Universities and Colleges.

I am also listed in Who's Who Among American Student Leaders.

I was the editor of my college newspaper and have several state and local journalism awards.

I have studied in Dublin, Ireland and at The American Academy of Dramatic Arts in New York.

I am presently working as a copywriter in the advertising department of the largest department store in Charlotte, North Carolina.

I have diabetic retinopathy and am threatened with blindness because I have been a diabetic for over 17 years.

The accomplishments listed above -- all of which I am very proud -- I have done not totally aside from the diabetes but in spite of the obstacles that the disease placed in my way. I have lead what non-diabetics tend to call the "take-your-insulin-and-lead-a-normal-life." It all depends on what you call normal. If you would term the following things normal, then I beg to differ with you: Taking two insulin injections a day, no matter where you are, whether in the middle of a rehearsal or in the middle of Europe. Eating at exactly the same time every day, seven days a week, 365 days a year. Not being able to have fashionably late dinners because you have to eat at the unromantic hour of 6:00. Not being able to sleep past 8:30 on Saturday mornings because you have to get up and take your shot. Measuring your food on a scale. Fighting the eternal battle of trying to balance your

exercise, insulin and food; then for some bizarre reason still showing sugar when you make one of your four daily tests for glucose. Maybe it was an emotional upset. They say not to let yourself get too emotionally upset because that has quite an effect on diabetes. That's a little difficult to control.

All of these things may seem small to a non-diabetic. But being different year after year begins to wear on you. Things like not being able to eat the cake baked for your own surprise birthday party, hurt. But there two other things in this never-ending list, that I personally have experienced within the past few months, that cannot possibly seem insignificant to anyone. And that's being a twenty three year old woman and being told that you have diabetic retinopathy because of which you could easily be blind before the age of 35. And that you can never have children of your own, also because of the retinopathy.

Thankfully, I've been one of the lucky ones and have been in excellent hands. I was at the Joslin Clinic in Boston, Mass. for lasar treatments on my eyes. I was examined by one of the men who invented the process, Dr. Aiello. And met Dr. Soeldner who is working on the artificial pancreas. These magnificent men, among many others, impressed on me once again the urgent need of funds in the field of diabetes research.

A few fact about diabetes: The life expectancy of even a controlled diabetic is 25% shorter than that of a non-diabetic. The diabetic faces greatly increased chances of heart disease, stroke, blindness, hypertension, kidney failure and loss of limb. Diabetes is the fifth leading cause of death by disease in the United States and the second leading cause of blindness. Insulin, far from being a cure, merely prolongs death for the

diabetic. We must find a cure! Over the past twenty five years the occurrence of diabetes has increased 300% while the population has increased only 50%!

Last year diabetes research received only 1% of all federal funds allocated for research. And lack of money cannot be the problem. Please don't tell me money is tight when the federal government can spend exorbitant amounts on projects such as the following:

-- $2 million for a yacht for Yugoslavia's Marshal Tito

-- $121,000 to find out why people use the word "ain't"

-- $70,000 to study the smell of perspiration given off by Australian aborigines

-- $68,000 to the Queen of England for not growing cotton on her Mississippi plantation

-- $34,314 for a potato chip machine for the Moroccans

I could go on...and on.

I want a cure for diabetes. Sure, my reasons are partially selfish. I don't want to go blind. I don't want to lose all the feeling in my feet. I do want to have children.

But I have other reasons...I don't want diabetic children to have to face the awesome and very frightening prospects that I have. Becuase it isn't necessary. I have discovered that you don't have to be an old or even a middle-aged diabetic to have very serious complications. And these aren't necessary either. We can find a cure. It is within reach. But we desperately need money for research.

Thank you for allowing me to be here today.

Testimony Presented to the
National Commission on Diabetes
by: Ms. Patricia A. Schultz

5521 West Jackson Street
Pensacola, Florida 32506
June 27, 1975

Dear Mr. Wartofsky:

I hereby offer my personal appreciation to all those involved in preparing the Commission's Report to Congress regarding diabetes. The approach being utilized is also commendable.

Secondly, I wish to make a plea that Pensacola, Florida be considered as a possible site for one of the ultimate Diabetes Teaching Centers which Public Law 93-354 may assist in establishing. We are a population of 235,000 and we are a fast-growing health care center. We do not presently enjoy the many educational opportunities of a research center but we do affect health care delivery to a highly significant degree. We do not have a diabetes teaching center in our community nor does one exist in any of the surrounding communities, yet the incidence of diabetes is considerable. Such a center would dramatically improve the management and control of diabetes in a great many ways and a great many lives.

Needless to say, not all diabetics reside in cities where there are teaching centers; fortunate for the diabetics who do. Nor does a diabetic, under ordinary circumstances, realize that if there is no diabetes teaching center in a certain community this could affect his moving to a new location. People with diabetes live <u>everywhere</u>; we must help them <u>everywhere</u> possible.

Some of the five hospitals in Pensacola have diabetes educational programs but these cover a very definite limited scope in that there is essentially no outreach to the community at large. I would be amiss not to mention the incredible lack of professional education that exists in our area regarding diabetes and it's management. A Diabetes Training Center would serve as a crucial adjunct to the education of the health care professional, i.e., physician, nurse, pharmacist, dietitian, etc.

This, in essence, is asking the Commission to consider most carefully the community that is not so fortunate as to have a research center and that still must serve as a health care center to even smaller communities to be identified and selected as prospective Diabetes Teaching Centers. Pensacola is just such a place. We are the nearest metropolitan area for medical care for the most part of Northwest Florida and have a considerable influx of referrals from south Alabama.

There are numerous existing deficiencies in the education of the person with diabetes, of his family, and of the health care professional that could appropriately and adequately be handled through an authoriative Diabetes Teaching Center in Pensacola, Florida.

I so recommend and most strongly.

Respectfully submitted,

Patricia A. Schultz

(Mrs.) Patricia A. Schultz, R.N., M.S.

PAS/hjn

cc: Dr. Keatha Krueger
Dr. Philip Felts
Mrs. Dorthea Webb Puckett, R.N.
Miss Cathy Ward

Mr. Victor Wartofsky
Public Information Officer
NIAMDD
National Institutes of Health
Building 31, Room 9A-03
Bethesda, Maryland 20014

Testimony Presented to the
National Commission on Diabetes
by: Ms. Molly Davenport

STATEMENT FOR PRESENTATION BEFORE THE
NATIONAL COMMISSION ON DIABETES
JULY 7, 1975

My name is Mollie Davenport. I am not a doctor, nurse or a diabetic. I am the mother of a three year old diabetic. A very frantic mother. My son has lived over half of his very short life with at least daily injections of insulin. When he was learning to speak he said "Moma", "Daddy", and "Shot hurts". We face every day that comes with the fear that only the family of a very young diabetic can know. How can a child that can't even talk tell you he is having an insulin reaction? How do you make him understand that you must have a speciman of his urine so you will know, when that child is only 16 months old and not tiolet trained? How do I explain to him that people across this great land haven't given diabetes enough thought in the last 50 years to find a cure for it?

Perhaps the most frustrating thing that confronted us when we learned that Matthew was a diabetic was the vast lack of understanding among medical personnel about what had caused him to become diabetic and just exactly how to go about best treating him. All of the agencies and clinics we talked to told us to learn to live with his diabetes and to teach him to live with it. I want more for my son that just existing! He has the right to more. All of the publications, screening programs and foot care clinics in the world are not going to do him any good. It has been proven time and time again that even with the very best medical care available, the terrible complications of diabetes cannot be stopped. Research into the causes and

Research looking for a cure for diabetes is the only hope my son and thousands of other young diabetics have.

I plead with you on behalf of my child and all the other juvenile diabetics in this country, indeed across the world, for this disease knows no boundries, to make research your top priority. Right now we have hopes for a cure. Please turn those hopes into facts be attacking diabetes as ruthlessly as it attacks millions ofyour fellow human beings.

Thank you.

Mrs. William L. Davenport, Jr.
4407 Millbridge Dr.
Charlotte, N. C. 28208

Testimony Presented to the
National Commission on Diabetes
by: Dr. Benjamin Saffan

DR. BENJAMIN D. SAFFAN
PEACHTREE MEDICAL BUILDING
401 PEACHTREE ST., N. E.
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TELEPHONE 525-7671

July 7, 1975

Dr. Keatha K. Krueger (Executive Secretary)
Diabetes Program Director
National Institute of Arthritis, Metabolism, and
Digestive Diseases
Westwood Building, Room 626
Bethesda, Maryland 20014

RE: Summary of testimony presented to the National Commission on Diabetes at the Center for Disease Control, Atlanta, Georgia, July 7, 1975.

Dear Dr. Krueger:

The testimony presented consisted of remarks under the heading, "Schizophrenic Nutritional Experiences of a Practitioner of Medicine."

The following points were made in ironic fashion:

1. Lack of agreement of authorities on the value of nutritional advice in treatment of diabetes mellitus.

2. The use of sulfonyl ureas in the treatment of diabetes have not been demonstrated to be of any benefit and have tended to detract from sound nutritional practice in the treatment of diabetes mellitus.

3. Standards of care of diabetes appear to be lacking in rural areas of Georgia.

4. Lack of agreement among the authorities has apparently produced relative apathy on the part of younger physicians in nutritional management.

5. There appears to be a demand on the part of the public for information on diabetic care.

6. The speaker reported on a proposed study of patterns of diabetic care and dissemination of information concerning diabetes in rural Georgia. Unfortunately funds have not been available for obtaining this information through student fellowship as planned for this summer; however a mailing of a questionnaire is intended in the near future and results will be reported to this National Commission on Diabetes.

Thank you for allowing me to give testimony.

Sincerely yours,

Benjamin D. Saffan, M. D.

BDS/mfb
Dictated 7/7/75
Transcribed 7/10/75

CC: John K. Davidson, M. D.
Diabetic Day Care Center
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Elaine Morris
Georgia Diabetes Assoc.
762 Cypress St., N.E.
Atlanta, GA 30308

Louise Williams
Georgia Diabetes Assoc.
762 Cypress St., N.E.
Atlanta, GA 30308

Testimony Presented to the
National Commission on Diabetes
by: Dr. Eugene Fierier

Thank you for allowing Mr. Robert Kronowitt and myself the privilege of appearing before you.

We are presently in the midst of a terrible war.

Diabetes has reached epidemic proportions in the country and is a major killer of our citizenry, directly and indirectly, and OUR GOVERNMENT TREATS DIABETES LIKE AN ANNOYING SEASONAL ALLERGY.

When will the rhetoric stop and the action begin? We can wait no longer!

At the rate we are going in several short generations, 50% of our population will have Diabetes.

Our research, diagnostic and treatment needs are as great as heart disease and cancer, but what do we get? - a pittance!! - It would be much too embarrassing to the health community to compare the needs of diabetes and the funds allotted it. To me, it is more than embarrassing, it is criminal neglect.

As a parent of an Insulin-dependent Diabetic, and a practicing Internist, I cannot accept a slow, slumbering pace of Governmental study and delay. My son, and the MILLIONS of Diabetics cannot wait and deteriorate while we all commiserate.

Need I remind you of the dire complications of Diabetes, loss of vision, kidney failure, markedly premature aging with its attendant consequences, early coronary artery and peripheral vascular disease with its terrible effects on the heart and limbs, neuropathy, loss of motor function and severe pain without letup and treatment. These are the consequences of our neglect and the Government's failure.

A few words about the Juvenile Diabetes Research Foundation. - We are a rapidly growing Florida organization with a voice of over 4,000 families, groups, and businesses. An organization dedicated to research and diagnosis and treatment of Diabetes, the focal point being the Diabetes Research Center of the University of Miami School of Medicine, directed by Dr. Daniel Mintz.

Our concept is one of area fund-raising for regional centers. We are firmly dedicated to the "Center Concept", - bringing the finest minds, talents, and equipment

together to enhance and speed up the processes of research. - a mass movement technique.

At our Center, the most advanced present research in the world is going on, the Beta Cell Implant Technique.

The Diabetes Research Center has an extensive, intensive research program under Dr. Mintz's aegis devoted to a full program of basic cellular research, as well as the most advanced research in the Beta Cell Implantation technique.

This most logical of all approaches to normalization of blood sugars and thereby the prevention of the complications of Diabetes has been progressing rapidly and well. It cries out for immediate, additional funding, and we beseech you to find a way NOW, again I repeat, NOW to make this possible.

The advanced state of the techniques developed at our Diabetes Research Center are available for perusal and evaluation, and we invite you to visit the Center. The work of Dr. Mintz and his Associates is well known among the honored and respected in the field of Diabetes research.

With sufficient funding now, we feel that the Diabetes Research Center could unfold the most advanced, exciting, essential material thus far in modern Diabetes Research.

In January of 1975, J.D.R.F.'s center concept was dedicated - the Diabetes Research Center - a unique amalgam of private University Medical school, a center of brilliant, exciting, research - and a hardworking private fund raising organization.

However, we cannot do the job without help. With Federal assistance, the job can be done that much more quickly.

Without it, we can get the job done, but much more slowly, while the relentless "Quiet Killer" performs its nefarious harm - millions of unwanted complications - dire in nature; thousands, and thousands and thousands of unnecessary deaths because we all have failed in our job.

We, therefore, make, to the Commission, the following recommendations which the J.D.R.F. fervently believe can quickly rectify this terrible state of health care.

We urge the Commission to make a relavent and important part of their report:

A) The regional, presently functioning centers doing fabulous research must be enlarged rapidly with personnel and adequate funding. Such Centers, as the "Diabetes Research Center," must be immediately and adequately funded, and its "Triangular" concept expanded to other Centers.

Our triangular concept conceives of the Center at the apex of an equilateral triangle with the other points, being the actual research area, and also a properly conceived diagnostic and treatment center.

B) Be prepared for and fully realize the necessity of many years of adequately funding diagnostic and treatment centers for:

(a) Earliest possible diagnosis of the disease.

(b) Preparation for proper treatment (which I, personally, know will be the Beta Cell Implant.)

(c) The specific therapy (i.e. - the Beta Cell Implant).

(d) Essential long term followup of these patients.

* Note - WE OF THE J.D.R.F. AND DIABETES RESEARCH CENTER ARE AT PRESENT ESTABLISHING A MODEL FOR A DIAGNOSTIC AND TREATMENT CENTER AT THE UNIVERSITY OF MIAMI.

The Congress must be made aware of the immediate research needs and the long term medical care models that must be developed for followup over a period of many years.

(C) The Federal Government must encourage State Governments through their health agencies to support these regional centers. - the J.D.R.F. has already been at work with out State Legislature and Health Agencies and are very, very hopeful of State Government approval in the next Legislative Session of the Regional Diagnostic and Treatment Center concept.

D) We of the J.D.R.F. feel very deeply and strongly that Diabetes Research CANNOT, WILL NOT AND MUST NOT have to wait the 2 to 3 years it will take this commission to get any funding.

* I would therefore like to present to you now a new, and I believe, an innovative and logical approach to immediate, special funding.

I would like to present to you the concept of "FEDERAL MATCHING FUNDS FOR DIABETES RESEARCH."

Let us present to the President and to the Congress in the next few months a concept of union between the private Diabetes fund-raising sector of the country and the Federal Government - a potentially very happy marriage - to allow for immediate funding of essential Diabetes Research.

LET US ALLOW THE COMMISSION TO PRESENT A FULL REPORT FOR FUNDING NEEDS FOR TWO OR THREE YEARS HENCE,BY COMPLETING ITS AREA MEETINGS,AND COMPILING NECESSARY INFORMATION.

BUT, LET US NOW SEEK IMMEDIATE FINANCIAL HELP THROUGH MATCHING FUNDS. THIS TECHNIQUE IS USED FOR TRANSPORTATION, VEHICLES, ROADS, BUILDINGS, ETC.

IF IT'S GOOD ENOUGH TO MOVE US AND HOUSE US, IT OUGHT TO BE GOOD ENOUGH TO SAVE 12,000,000 U.S. CITIZENS" LIVES.

Practically, the Diabetes Research Center of the University of Miami has needs far beyond J.D.R.F.'s present funding capacities. Fiscal Year, 1975, we raised about $275,000.00 - and I'm proud to say 90% goes to Research. Conforming to our Charter and Bylaws, we expend 10% or less for costs of operation. Next year, we hope to raise $400,000.00 by dint of hard work, without time and/or effort restrictions on our part.

However, the needs of the Diabetes Research Center are double to triple that in order to properly carry out its extensive research program to attain a "practical cure" For Diabetes - if the Government were to "match" the funds raised by such organizations, as our J.D.R.F., for ongoing essential research programs and Diagnostic and Treatment centers, we could survive and grow, as we must.

A percentage formula for matching funds could be arrived at equitably. This would allow the necessary immediate expansion of the programs presently going on, and still allow for proper evaluation of long term funding, as originally planned for the commission.

What a wonderful way to do the job. - A means by which the private sector can cooperatively work with the Federal Governemnt and support the presently partially funded research projects with matching Federal funds.

It can be done quickly!! Just think of the immediate advantages of this principle, and it merely extends a funding technique presently being used by the Government.

E) Finally, I would like to present to this Commission another program which I believe is essential to the eventual cure for Diabetes.

A "NATIONAL COUNCIL OF DIABETES ORGANIZATIONS" is essential to the future existence of private fund-raising and educational Diabetes organizations. In preliminary discussion, this concept was presented to the past and present presidents of the American Diabetes Association and the Board Chairman of the J.D.F.

Unless we all get together to enhance our informational, educational, and fund-raising capabilities on a national and if possible continental basis we shall fail. We of the private segment of the community must pull our share of the load in wiping out this "Dread Scourge" or we shall forever bear the guilt of failure.

We cannot demand anything of the Federal Government unless we are ready to make demands upon ourselves.

We, who are vitally interested in eliminating the "Quiet Killer" - Diabetes, - must assist the Government in funding the program at this time.

We need the encouragement of the President's office and this commission in order to get this organization off the ground.

Ladies and gentlemen, we here may be aware of the epidemic - Diabetes - that surrounds us. It is our job to bring the extent and urgency of this horror to the President and the Congress, and our countrymen at once.

The Diabetic cannot wait, nor can we! You must get us immediate funding, as well as 2-3 years from now.

I hope that I have been able to bring to this body the urgency and extent of the needs.

I hope also that the Commission will seriously consider the idea of matching Diabetes Research and Treatment Center funds for immediate funding and also propound the concept of a National Council of Diabetes organizations.

For this consideration and the time allotted to me in behalf of the J.D.R.F., I thank you all.

I would be happy to answer any questions.

Testimony Presented to the
National Commission on Diabetes
by: Mr. Robert Kronowitt

I would like to thank the members of the commission for this opportunity to present the views of the J.D.R.F..

I shall not take the commission's time with quoting statistics which we here are all too familiar with, nor shall I dwell on the awesome devastation and human misery of diabetes, which sometimes tends to be forgotten in the cold clinical analysis of assessment and approach.

However, I speak first as a parent of achild with diabetes who faces the terrifying odds of complications - I speak secondly as the Executive Director of the J.D.R.F. who in daily contact sees the results of those complications - and thirdly I speak as a friend of Gary Kleiman - a young man of 22 - who appeared with me two years ago in front of another committee that was considering the bill that resulted in the creation of this commission.

Gary is a juvenile diabetic who is now blind. Two years have passed since that testimony and now Gary's kidneys are failing.

It is with frustration and anger that I realize that another two years shall most probably pass before the first dollar of the monies authorized by this bill shall reach the hands of diabetes researchists.

How many Garys will have gone blind - and died in that length of time? The research monies authorized by Congress indicated a recognition of the need - but the need is now - and it is urgent.

Diabetes, as the statistics have shown, is a health problem of epidemic proportions. Whatever figures are available now are out of date well before they can be acted upon.

Because of a 50 year gap in the recognition of diabetes as a serious desease, with devastating complications, the vast majority of the general public is still unaware of the toll wreaked by diabetes on both young and old alike.

The meager funding of diabetes research in the past has been tragic, but the delay in that funding now is not acceptable.

Over the past two years there has been a constant drumfire of news articles published in the media that have first lifted and then dashed the hopes of millions who suffer intimately the ravages of diabetes.

The quest for research funding has led to a competition for publicity as a means of garnering public support. The publication of these articles intimating the imminent availability of panaceas for diabetes leads to the public to suppose that the battle is all but over and it severely hinders those private groups who are actively raising the monies to support diabetes research.

There is a need to clearly identify the major avenues of investigation and channel funds into those facilities that are capable of pursuing those avenues.

There is a need to develop a common resource of materials, supplies and experimental animals to avoid the immense waste of time, effort and monies necessary for each individual facility to obtain these resources.

It is important to realize also that while much important progress has been made in the past few years in diabetes research, the daily problem of quality care for diabetics is real.

With the startling rise in incidence of diabetes, the average practicing physician is unable to provide sufficient time for education, counseling and treatment of the diabetic patient. The burden of staying abreast of the torrent of medical advances in all phases of medicine while adequately administering to a growing demand for quality care, has placed the physician in the untenable position of turning away patients in need or giving insufficent care to many There is no current provision for the average physician to provide the many hours of counseling and education that alleviate the emotional stress that so adversely affects the physical well being of the diabetic patient.

The model of an approach to the solution of the problem of accelerating research and delivering quality health care of a specialized

nature has already been created in other fields of scientific endeavor.

The establishment of scientific centers of excellence that in our recent past resulted in the rapid development of the Atomic bomb and the placing of men on the moon, illustrate vividly the practical application of bringing eminent scientists together in a concerted team approach. The wisdom and logic of centers of excellence that would stimulate progress through interchange and that would hasten development of the medical-scientific technology necessary for the practical application of results are almost too apparent to need repetition.

The center's approach would not preclude the need for individual efforts in many areas, but the complexities of modern investigation cry out for teams of experts in varying but related disciplines that can together do more than individuals can do separately.

This same centers of excellence approach can be usefully brought to bear on the problem of making available specialized medical knowledge in diagnosis, treatment and stabilization of diabetes through a referral system that would ease the burden on the individual physician and yet provide the best quality care to the largest number at the least cost.

Separate but a part of the whole is the need for a satellite program of counseling and education centers located in accessible local areas to provide a continuing service that would deal with the necessity of keeping the diabetic out of the hospitals and in the mainstream of useful productivity. The savings in less hospital admissions and lost work times, not to mention human suffering, would make this aspect of the program self-sustaining.

For the first time in the medical history of our country, we have the opportunity to achieve a co-ordinated, comprehensive program of quality health care while strenuously accelerating the elimination of the disease itself.

It is an opportunity that must not be missed, thwarted or delayed.

Since 1971 the J.D.R.F. has attempted, as a private non-profit foundation, to institute such a comprehensive plan.

We have created a major funding base in the State of Florida with a growing program of publicity to bring an awareness of the true nature of diabetes to the general public through the use of all media.

We have supported the National Legislation for Diabetes Research and introduced into the State Legislative a bill for the creation of regional treatment centers in a State-wide approach to diabetes care. We have created and funded the Diabetes Research Center of the University of Miami School of Medicine where in the past three years significant progress has been made in areas of tissue cutting and the development of the beta cell implant.

The direction of a co-ordinated comprehensive state-wide program of centers of scientific excellence in research, quality health care and counseling and education may well serve as a model that could be instituted on a national scale.

But to repeat a plea made two years ago - the time is now, the need is urgent.

AN OUTLINE OF:

A STATEMENT OF CONCERN BY THE JDRF TO THE NATIONAL DIABETES COMMISSION

THE PROBLEM

1) Diabetes as an existing and growing health problem
2) The lack of recognition of Diabetes as a serious disease
3) The meager funding of Diabetes research in the past and present
4) The lack of communication and co-ordination amongst researchists

(i.e.)
a) competition for publicity
b) inaccurate news releases
c) wasteful allocation of funds
d) identification of major avenues of investigation
e) development of resources for investigators

5) The lack of continued funding leading to the loss of or impediment of potentially valuable research programs
6) The quality of care available to Diabetics and its needs

(i.e.)
a) The average practicing physician is at a loss to provide sufficient time for proper treatment and counseling
b) Current, clear and concise information regarding treatment of Diabetes is available neither to the physician nor patient
c) The present modus operandi of the physicians office does not allow for the follow-up procedures necessary to alleviate the individual and family emotional problems that so adversely affect the management of Diabetes.

AN APPROACH TO THE SOLUTION

1) The team approach in research

a) Centers of excellence
b) Utilization of existing facilities
c) The stimulation of progress through interchange
d) The development of medical-scientific technology for implementation

2) The team approach to present care needs

a) Centers of expertise in diagnosis, treatment and evaluation
b) Centers of expertise for family counseling and education
c) A potentially viable structure

For the first time in the medical history of our country, we have the opportunity to attack, on all fronts, in a co-ordinated effort, one of our major health problems and acheive an unparalled excellence of current care while strenuously accelerating the elimination of the disease itself.

THE JDRF --- A DIRECTION

1) Since 1971 the JDRF has attempted to institute a comprehensive plan of action to implement the foregoing concepts

a) Creation of a major funding base
b) Creation of a continuing source of communications
c) A comprehensive campaign of publicity stressing the TRUE nature of diabetes

    1) TV commercials
    2) Radio spots
    3) Billboards
    4) Newspaper
    5) Speakers Bureau

d) Support of National Legislation for Diabetes Research
e) Creation and funding of the Diabetes Research Center of the University of Miami School of Medicine
f) Creation and introduction of State Legislation for a comprehensive State Wide approach to Diabetes Care.

2) The direction pointed by the JDRF of a co-ordinated effort, that may well serve as a model on a regional basis.

Testimony Presented to the
National Commission on Diabetes
by: Ms. Roslyn Greenspon

Ladies and Gentlemen, I deeply appreciate the opportunity to be here today. You are shaping my child's life.

May I ask each of you to do something with me. Would each of you close your eyes for a moment. Now, think carefully and imagine the most beautiful face of your most favorite child. It may be your own child, a cousin, a friend. This child may be 15 months, 6 years or 16 years old. Is that child's name Janie or Kim or Mike or Tommy or Ann or Steve or Nancy? Imagine that child smiling at you with his big brown eyes--that innocent smile of trust. That's a nice picture, isn't it? Now, imagine your feeling when you're told that Kim or Tommy must live on insulin for the rest of his life. Imagine the feeling when you realize the long-term complications for that lovely person. Painful, isn't it?

Yes, it is. We, in our family, know that feeling. Our Keith, now 12 1/2, is vibrant, full of life and spark. He handles his insulin reactions, his nausea and ketones, his never-ending awareness of how he feel---he handles these happenings as though they're supposed to be. He seems to accept his diabetes with understanding and he goes on with his happy daily activities with trust. Keith gives us courage. The future gives us courage.

Our oldest son <u>is</u> a diabetic..."thank G-d" we say. And you may question that comment. But we say "Thank G-d" that Keith is a diabetic <u>now</u> and not 10 years ago--or even 5 years ago. And, we say "Thank G-d" for insulin and "Thank G-d" for research.... for without research where would our Keith or Keith or Susan or Molly Davenport's young Matthew be today? No where.

So where do we go from here?

I appeal to you, Ladies and Gentlemen. You've heard the statistics many times. You now clearly know the problems and you now know the good possibilities for better treatment and possible eventual cure for Diabetes.

I appeal to you from the standpoint that 8-12 million diabetics IS an overwhelming number...that the leading cause of new blindness IS an overwhelming statistical complication. But, numbers don't have faces and numbers don't have feelings.

Real people-yours and my people- have diabetes. And research is the ONLY reason they're alive today. Research and only research will improve and lengthen the lives of these real and vibrant people whom we love.

We, as parents and as diabetics ourselves, are truely hopeful and optimistic. I personally look toward the future with a positive belief that things <u>are</u> happening.. that more understanding and awareness is being gained.

We count on the fact that, through your deep committment to these long sessions of hearings, you will feel the importance of Diabetes Research and will recommend that more interest and more MONEY for Diabetes Research be funded by our government.

The problems of persons who take insulin are so magnified as compared to the diet or pill controlled diabetic. Our children constantly encounter tremendous pressures. I ask you to study the problems of the younger diabetic - problems of emotional growth, physical growth, tight or loose control, insulin shock and coma. In other words, I appeal to you for more research funds, especially in the area of the long term insulin dependent diabetic.

So that your Laurie or Jennifer, your Bryan or Freddie will stand with Keith and Susan, with Jan and Matthew as part of the generation who has seen and felt that the disease of Diabetes has become less of a threat to each of our lives.

And may I thank each of you individually for your time and effort in helping us to have a better future for all of our families.

And----when diabetes is cured, each of you will know that you have been a major part of that cure. Thank you so very much.

(Mrs. Stan) Roslyn G. Greenspon
5411 Doncaster Drive
Charlotte, N.C. 28211

Testimony Presented to the
National Commission on Diabetes
by: Mr. Ellis Tarsihes

STATEMENT TO COMMISSION ON DIABETES
ATLANTA, GEORGIA
JULY 7, 1975

THANK YOU LADIES AND GENTLEMEN FOR ALLOWING ME TO APPEAR BEFORE YOU AND SPEND A FEW MOMENTS TO EXPRESS MY THOUGHTS ON DIABETES, ONE OF THE MOST LETHAL DESEASES FACING THIS COUNTRY TODAY. I AM A CERTIFIED PUBLIC ACCOUNTANT FROM MIAMI, FLORIDA AND UP UNTIL THREE YEARS AGO MY FAMILY, WIFE, SON AND DAUGHTER, LIVED A NORMAL EXISTENCE, TOTALLY IGNORANT OF THE WORD DIABETES, ITS IMPLICATIONS, AND ITS RAMIFICATIONS.

THOUGH I AM SURE YOU ARE ALL FAMILIAR WITH MANY CASE HISTORIES, ALLOW ME TO CONVEY MY MOTIVATION FOR SPEAKING TO YOU TODAY. THREE YEARS AGO, MY WIFE AND I DROVE TO A SUMMER CAMP OUTSIDE JACKSON, MISSISSIPPI WHERE OUR SON AND DAUGHTER WERE COUNSELLORS. WE PICKED UP OUR DAUGHTER IN ORDER TO VISIT COLLEGE CAMPUSES AND LEFT OUR 15 YEAR OLD SON, HEALTHY AND STRAPPING, TO ASSIST IN CLOSING THE CAMP. TEN DAYS LATER HE ARRIVED HOME IN MIAMI COMPLAINING OF INCESSANT THIRST AND MANY TRIPS TO THE BATHROOM. THESE SYMPTOMS PERSISTED BUT MADE NO IMPRESSION UPON US. TWO DAYS LATER, NOTICING A PERSEPTIBLE WEIGHT LOSS, WE CALLED OUR PEDIATRICIAN, WHO FORTUNATELY WAS INTERESTED IN DIABETES. AFTER A FEW SUCCINCT QUESTIONS, RUSTY WAS SENT TO THE HOSPITAL AND AT THIS POINT JOINED THE INCREASING NUMBER OF JUVENILE DIABETICS IN THE WORLD.

HOW HAS THIS EVENT AFFECTED OUR FAMILY? WE HAD AND WERE EXPERIENCING THE NORMAL TEENAGE PROBLEMS OF MATURITY AND REBELLION. WE PRIDED OURSELVES ON THE RAPPORT WE HAD WITH OUR CHILDREN AND CAN TRUTHFULLY SAY THAT THIS RAPPORT HAS HELPED ALL OF US SINCE DIABETES ENTERED OUR LIVES. BUT WHAT

DEVELOPED? A CONFLICT BETWEEN FATHER AND SON, WHICH CAME CLOSE TO THE BREAKING POINT. A FATHER TRYING TO BE RATIONAL AND UNEMOTIONAL, TRYING TO HELP HIS SON. A TEENAGE DIABETIC, INJECTING INSULIN EVERYDAY, WANTING TO REMAIN A NORMAL INDIVIDUAL AND RESISTING MY EFFORTS IN HIS DESIRE NOT TO BE DIFFERENT. I SAT WITH OUR SON ONE NIGHT WHILE HE BITTERLY SOBBED, NOT WANTING TO BE DEPENDENT FOR LIFE UPON A NEEDLE. WHAT OTHER EXPERIENCES DID WE ENDURE? WE WENT THROUGH PERIODS OF JEALOUSY ON THE PART OF OUR DAUGHTER, EIGHTEEN MONTHS OLDER THAN OUR SON, BECAUSE SHE FELT THIS NEW INTRUDER WAS OUR MAIN FOCUS OF ATTENTION. BOTH OUR CHILDREN, NOW STUDENTS AT THE UNIVERSITY OF GEORGIA, ARE ASKING QUESTIONS. MY SON - SHOULD HE MARRY? WILL HE BE REJECTED BY A WOMAN HE LOVES BECAUSE OF DIABETES? MY DAUGHTER - WILL HER CHILDREN BECOME AFFLICTED WITH DIABETES? WILL SHE BECOME A DIABETIC? AND WHAT OF OUR PROBLEMS? AFTER JOINING THE NATIONAL JUVENILE DIABETES FOUNDATION, WE FOUND WE WERE NOT ALONE. WE FOUND MANY OTHERS HAD SIMILAR PROBLEMS. WE FOUND THAT THE PROBLEMS OF A TEENAGE JUVENILE DIABETIC ARE DIFFERENT THAN THOSE OF A TWO YEAR OLD, A FIVE YEAR OLD, OR A TEN YEAR OLD DIABETIC. WE FOUND PARENTS WHO REFUSE TO ADMIT THAT THEY HAVE A DIABETIC CHILD. WE MET A YOUNG MAN IN MIAMI WHO IN HIS SOPHOMORE YEAR OF COLLEGE STARTED LOSING HIS EYESIGHT AND EXPERIENCED KIDNEY FAILURE. HE HAD NEVER BEEN TOLD BY DOCTORS THESE COMPLICATIONS COULD OCCUR. EXCEPT FOR CIRCUMSTANCES, THAT BOY COULD BE MY SON. WE LEARNED OF THE DEATH OF A YOUNG MAN IN HIS TWENTIES - DEATH ATTRIBUTABLE TO DIABETES. WE LEARNED OF A YOUNG GIRL WHOSE TOES HAD TO BE AMPUTATED DUE TO DIABETIC COMPLICATIONS. WE FOUND THAT HOSPITALS, NURSES, AND EVEN DOCTORS DID NOT UNDERSTAND JUVENILE DIABETES. WE FOUND THAT A CURE IS UNKNOWN; THAT FUNDS FOR RESEARCH ARE LIMITED; THAT THERE IS A DESPERATE NEED FOR ASSISTANCE FROM THE FEDERAL GOVERNMENT. OUR PROBLEM HAS BECOME ONE OF TELLING THE STORY OF DIABETICS LIKE IT IS. OUR PROBLEM IS FINDING ENOUGH TIME AND STRENGTH TO DO WHATEVER

POSSIBLE IN THE FIGHT AGAINST DIABETES.

LAY PEOPLE ARE LIMITED IN THESE ENDEAVORS. OUR LAY ORGANIZATIONS CAN TAKE THE LEAD IN THE FIELD OF EDUCATION, OF FAMILY COUNSELING AND CAN RAISE MONEY. BUT WE ARE UNABLE TO RAISE SUFFICIENT MONEY TO BRING ABOUT THE REQUIRED RESEARCH. WE ARE NOT CLINICAL TECHNICIANS WHO WILL SOMEDAY FIND THE CAUSE AND CURE FOR DIABETES. MY WIFE AND I PRAY EVERYDAY AND EVERY NIGHT THAT A CURE WILL BE FOUND. IT PERHAPS MAY NOT HELP OUR SON, BUT IT COULD HELP OUR GRANDCHILDREN. YES, WE ARE EMOTIONAL, BUT WE ARE ALSO REALISTIC. A CURE WILL NOT COME TOMORROW OR NEXT WEEK, BUT EVERYDAY MORE PEOPLE ARE BECOMING AFFLICTED WITH DIABETES. WE NEED THE GOVERNMENT'S HELP. THE DIABETES BILL WHICH CREATED THIS COMMISSION'S EXISTENCE IS RECOGNITION BY THE GOVERNMENT OF THE PROBLEM. BUT DOES THE GOVERNMENT RECOGNIZE THE URGENCY OF FINDING THE SOLUTION TO THE PROBLEM? THE MOST IMPORTANT STEP IS THE APPROPRIATIONS OF FUNDS. WE ARE ALL AWARE OF TODAYS ECONOMIC CONDITIONS. TODAY, IT IS INCREASINGLY MORE DIFFICULT TO RAISE FUNDS IN THE PRIVATE SECTOR. WE REALIZE THERE ARE OTHER DESEASES WHICH REQUIRE RESEARCH FUNDS. WE ONLY WANT TO BE RECOGNIZED AND RECEIVE OUR FAIR SHARE OF THE MONEY TO BE EXPENDED. WE MUST MAKE DIABETES A REPORTABLE DESEASE SO THAT THE WORLD AT LARGE, AND MORE IMPORTANTLY, OUR FEDERAL GOVERNMENT WILL BECOME AWARE OF THE DEADLINESS AND TREMENDOUS INCREASE OF DIABETES. BY 1980, AS YOU KNOW, SOMEONE IN YOUR OWN FAMILIES COULD BECOME A JUVENILE DIABETIC. THE COUNTRY'S NEED IS NOW!

IN THE FURTHERANCE OF YOUR DELIBERATIONS, I ASK YOU TO SEPARATE THE PROBLEMS OF THE JUVENILE DIABETIC FROM THAT OF ADULT ONSET DIABETES. THE PROBLEMS ARE VASTLY DIFFERENT. MAY I ALSO ASK THIS BODY TO STUDY THE QUESTION OF LOOSE VERSES TIGHT CONTROL. THE DESEASE IS BAFFLING ENOUGH IN ITSELF AND THE PROPONENTS

OF BOTH TYPES OF CONTROL PRESENTS CONFUSION FOR THE NEW AND OLD DIABETIC.

IN THIS AGE OF EXPENDITURES FOR SPACE EXPLORATION AND OTHER SUNDRY PROJECTS, WE MUST HAVE ANSWERS FOR THE CAUSE, EFFECT, AND CURE OF DIABETES. THE JUVENILE DIABETIC IS MY MAIN CONCERN BUT ALL THOSE AFFLICTED WITH THIS DEADLY DESEASE NEED THE COUNTRY'S FORESIGHT, ASSISTANCE, AND MOST IMPORTANT THE FUNDS NECESSARY TO KEEP AND EXPAND THE EXISTING RESEARCH PROJECTS AND OTHER WORTHWHILE PROJECTS IN THE FIELD OF DIABETES WHICH WILL APPEAR IN THE FUTURE.

Testimony Presented to the
National Commission on Diabetes
by: Mr. Wendell Mayes, Jr.

COMMENTS
by
Wendell Mayes, Jr.

Before the
National Commission on Diabetes

Atlanta, Georgia
July 7, 1975

Mr. Chairman and Members of the Commission:

First, let me express my appreciation for the opportunity to appear before you to express some of my thoughts about diabetes and what should be done to combat the problems associated with diabetes.

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So that you may know of the biases I may have and will be able to evaluate what I have to say, I think you should know that my son, Wendell Mayes III, became diabetic 9 years ago. He was almost 10 years old at the time. He is a very brittle diabetic. Apparently his diabetes is much harder to control than is usual even for juvenile diabetics.

Several years ago I was asked to serve as a member of the Board of Directors of what is now the South Texas Affiliate of the American Diabetes Association. Since then I have served as Chairman of the Board of Directors of ADA's South Texas Affiliate, as a member of the National Board of Directors and as Vice-President of the Central Council of the American Diabetes Association. I have served on ADA's Executive Committee for the past two years, and last month was re-elected to my second one-year term as Chairman of ADA's Board of Directors.

My principal duties as Chairman of the Board have to do with the administration of the Association and with public relations and fund raising. Of course, as a member of the Executive Committee and of the Board of Directors, I have been involved to one degree or another with all of the programs of the American Diabetes Association during the last several years.

During the 54 weeks that I have been Chairman of the Board of ADA I've attended many meetings of people interested in diabetes. In all, I've attended 79 different meetings of one type or another in 16 different cities. At these meetings, I've had the opportunity to discuss many aspects of diabetes with literally hundreds of people.

So, my comments today are being made as a father of a diabetic son and as an individual who incidentally happens to be Chairman of the Board of Directors of the American Diabetes Association.

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The American Diabetes Association conducts programs in four different areas: patient education, professional education, public education and research. These programs parallel the purposes of the National Diabetes Mellitus Research and Education Act which established this Commission. The purposes as stated in the Act are to establish a long-range plan to expand and coordinate research against diabetes mellitus and to advance activities in patient education, professional education and public education.

* * *

Everyone who has an interest in diabetes would like to see a cure. I'm no exception. I recognize that if there is to be a cure it can come only as a result of research.

I don't know how much is spent by non-governmental organizations on research into diabetes and its problems. I do know that the American Diabetes Association spent $836,000 on research in 1974 and that was the largest amount spent by any single non-governmental organization. But, whatever the amount devoted to research by non-governmental organizations in 1974, it was an insignificant percentage of the amount of money devoted to research by the National Institutes of Health.

Last year, the amount devoted to research by the American Diabetes Association increased 148% over what it was the previous year. I expect substantial increases again this year. Maybe not another 148%, but substantial nonetheless. I also expect that there will be substantial increases in the amounts of money dedicated to research by other organizations interested in diabetes. But, even so, I recognize that if major amounts of money are going to be made available to the research effort against diabetes the bulk of the money must come from the federal government through the National Institutes of Health. So, I hope that the plan presented by this Commission will call for a substantial amount of research into diabetes and its problems. And I'll pray that the research is successful and a cure and a prevention are found soon.

But I hope that the report will not emphasize research toward a cure to the exclusion of research designed to improve the methods of treatment and control and to reverse or prevent complications associated with diabetes.

For example, Dr. Roger Unger, who delivered the Banting lecture at a scientific session of the recent meeting of the American Diabetes Association, suggested in his lecture that better control of blood sugars might be obtained through reduction of glucogon concentrations in a diabetic's blood. I hope that research of this nature will go forward even though, as I understand it, the chances of this research leading to a cure are minimal at best.

Another example is a new surgical procedure which, I understand, has been used at the Department of Ophthalmology at the University of Miami's School of Medicine. If additional research could make this procedure more universally available and more likely to restore the sight of those who have been made blind by their diabetes, I think this research should go forward even though it has no promise at all of curing diabetes.

Another area I think deserves some attention is the psychology aspects of the disorder. The impact the diagnosis of diabetes in a young child has on him and his family.

Fortunately, I can't relate any first hand experiences about the bad psychological impact of diabetes on a family. But diabetes in my son did change our family.

I have two daughters in addition to my son. They were 14 and 17 years old when my son became diabetic. Both daughters are happily married now. But my younger daughter went through her teenage years with much less attention from her mother than my older daughter received.

My family is a very stable family. But if it were not, I can see how we could have had very serious social problems beginning 9 years ago.

And then, of course, the psychological impact on a young diabetic must be severe. I hear that not all cope with this aspect of their problem as well as my son did. And he hasn't coped with it easily.

So I hope your report will address itself to this, the need for better handling of the social and psychological problems caused by diabetes.

Sure I want a cure. And I want a prevention. But I am realistic enough to understand that no amount of money or no amount of research can guarantee that a cure will be found.

So for the benefit of the millions who have diabetes now and for the millions more who will become diabetic in the future, I think any research program undertaken by the federal government or by any private organization should concern itself with ways to prevent and to reverse the complications of diabetes; should concern itself with the social and psychological impact of diabetes. And should concern itself with better control of blood sugars. Of course it should concern itself with a cure for diabetes. A cure and a prevention.

But, it also should concern itself with all of the other things which would improve the lives of those who have diabetes or who will become diabetic.

* * *

But as important as research is, it isn't the only thing about which this Commission should be concerned. Assuming the most favorable results, I know of no one who thinks that diabetes will be gone within the next few years. The Diabetes Act says that diabetes is a major health problem in the United States which directly affects perhaps as many as 10 million Americans. The Act also says there's convincing evidence that known prevalence of diabetes mellitus has increased dramatically in the past decade. Under the most favorable of circumstances, a cure for diabetes is several years away. The 10 million or so people in the United States who are now diabetic and those other millions who will become diabetic should have the best care possible during what will be, under the best of circumstances, the several years before there's a cure.

The two programs of the American Diabetes Association which address themselves to improving the care of those who presently have diabetes are the Association's patient education and professional education programs. The purpose of the Diabetes Act, among other things, is to advance activities of patient education and professional education.

One of the unusual things about diabetes is that diabetics take care of their own health needs on a day to day basis. Of course it should be done with the advice of a physician or other health professional. But, on a day to day basis, many decisions are made by the patient himself. This fact increases the importance of a patient education program for those with diabetes.

I understand there's some disagreement, but many physicians and scientists feel that better control of the blood sugar of a diabetic would minimize the complications of diabetes. If this is true and if it's true that diabetics take care of their own day to day needs, then patient education takes on an even greater degree of importance.

One of the difficulties that many new diabetics and their families face is in learning about diabetes and how to take care of their new problem.

When my son became diabetic, we lived in a city with a population between 60 and 70 thousand. There were about 50 physicians. We have since moved from that city, but I think that while we were there both before and after my son became diabetic, he received very good medical care. Even so, after my son had been diabetic about a year, the pediatrician who was caring for him referred him to a physician who was on the faculty of the University of Texas Medical Branch in Galveston which was about a 9 or 10 hour trip from where we lived, even before the speed limit was 55 miles-an-hour.

It was not until we went to Galveston that our son or my wife or I learned the difference between the various types of insulin, the relationship of diet, insulin and exercise, the meaning of acetone in urine and all of the many things that a diabetic or person caring for a diabetic should know about.

Now we didn't live in a rural area, but very little patient education was available to us.

Because of the importance of patient education to the well-being of those with diabetes, better patient education must be made available to those who live away from the large metropolitan centers and from medical schools or medical centers.

And because of the importance of patient education, ways of making this education available to the poor need to be explored. The affiliates of the American Diabetes Association all conduct patient education programs of one type or another. And I've never heard of anyone being turned away from an ADA program. But if there are perhaps as many as 10 million Americans who are affected by diabetes, there surely must be millions who have not been reached by the American Diabetes Association. And the patient education programs of the American Diabetes Association are not intended to be a diabetic's primary educational experience.

About ten days ago, I was in Tulsa, Oklahoma and learned of a new diabetes education center that was established earlier this year at St. Francis Hospital in Tulsa. The education center is reaching about 20 or 30 people per week. Some of these are people who are repeating the course of instruction. And some are members of diabetic's families. There probably are more new diabetics diagnosed each week in Tulsa and eastern Oklahoma than the number who go through the education center at St. Francis Hospital. So the patient education program in Tulsa is probably losing ground every week. And Tulsa has a better than average situation as far as patient education for diabetics is concerned.

I hope the report of this Commission emphasizes the need for better patient education in smaller towns and cities of this country and in the rural areas, better patient education for the poor and the need for additional patient education facilities even in the cities.

* * *

But for a patient education program to be effective, it's necessary that there first be an effective professional education program. The Diabetes Act recognizes the importance of professional education when it says the research program shall provide for, among other things, the education and training of scientists, clinicians, educators and allied health personnel.

I told you a moment ago that when my son became diabetic, we lived in a relatively small city. The pediatrician who cared for my son thought it best that we receive advice from a physician on the faculty of the University of Texas Medical Branch at Galveston. Perhaps had there been better professional education programs in existence at that time, there would have been someone in the city in which we lived who would have been more knowledgeable about diabetes and its treatment. I would like to think that the situation has improved signficantly in recent years, but I doubt that that's the case.

ADA conducts various professional education programs, but I suspect that these programs are reaching only a small percentage of the physicians who treat those with diabetes.

During the course of these hearings you surely will hear from many who are more knowledgeable than I am about professional education. I would be surprised if you did not hear from them that there is a need for more emphasis on the treatment of diabetes in medical schools and better post graduate programs for practicing physicians and other health professionals.

* * *

The Diabetes Act mentions one other educational program: public education. This is an area in which non-governmental agencies can be most effective.

The American Diabetes Association has a public education program. ADA has conducted detection drives for a number of years, and through these detection drives, attempts to educate the public about the seriousness of diabetes and the desirability of early detection.

Members of various ADA committees worked hard last year when the Diabetes Act was being considered. Many ADA members testified during the congressional committee hearings. Many more told their own representatives about the importance of the bill. As a result of these efforts and the efforts of other organizations and individuals, the Diabetes Bill was passed and became law.

ADA and its members know that the passage of the bill was just a step. The report this Commission issues when it has completed its work will be another step.

Unless the public knows of the Commission's report and unless the public through its elected representatives in the Congress responds to the report, the next step may be a long, long time coming. ADA and its members will try, through its public education programs, to inform of public and the members of Congress of the importance of implementing the Plan your report will contain.

* * *

The American Diabetes Association, in fact, is anxious to assist the National Commission on Diabetes in any way that it can. From others who have appeared before your Commission, I think that you probably are familiar with the activities of the American Diabetes Association and the resources which the Association has.

The Association and all of its members eagerly await this Commission's final report. Because of the interest I know you have and because of the thoroughness with which you are going about your work, I am confident that this Commission will develop an excellent long-range plan to combat diabetes mellitus.

I feel the Commission has an opportunity that few groups have ever had. The National Diabetes Act obviously anticipates that you will develop a plan which cuts across many of the disciplines represented in the National Institutes of Health. The language in the charge to this Commission not only permits but encourages a broad coordinated research and educational program. You won't be hemmed in by the language of the Act and your Plan may go where your studies show it should. Is it any wonder that the American Diabetes Association and its members eagerly await your final document.

Testimony Presented to the
National Commission on Diabetes
by: Ms. Diana Camacho

I am appearing before you as a member of the health delivery system which interacts with those afflicted with diabetes mellitus and their families. In referring to the health delivery system as it applies to diabetics, I am broadly including all those institutions, organizations, clubs, professionals, paraprofessionals, and lay people involved in improving the plight of the individual diabetic.

No one doubts that the objective of the health delivery system is to provide alternatives that will help the diabetic live a functional and productive life, coping successfully with daily stresses. However, these alternatives or this "package of health information" which is presented to the diabetic, may not be and most often is not compatible with the culture or lifestyle of the diabetic. We in the health delivery system must realize that if we have failed to motivate the diabetic because of the incompatibility of our information with the experiences of the diabetic, we will not achieve our objective.

A most common complaint by the Spanish speaking citizens in Texas, who are afflicted with diabetes, is that the diabetic information available to them is only a translation, from English to Spanish, and is not a diet that takes into account their already well established food habits. We must realize that we do not make food anymore acceptable, nor do we change established food habits by making a menu readable. In essence what we may be left with is a Mexican-American with an Anglo diet who is longing for the foods

they used to eat before learning of their condition.

I am familiar with, and utilize multi-cultural diabetic food exchange lists, but the mere existance of these lists does not solve the problem to which I am referring. No doubt that these lists are a tremendous help to me in my everyday work, and are a comfort to those diabetics who have learned how to use them and now realize that 1 bread exchange is equal to 1 tortilla or ½ bagel. Unfortunately, however, these lists are not available to all those health educators who are attempting to teach the diabetic to cope with his or her condition.

I am appalled by and question the effectiveness of those individuals in this field who are not aware of the existance of these exchange lists. In 1973, I chaired a workshop dealing with Migrant health problems. During the workshop, there was extended discussion on helping the migrant live with his diabetic condition. It surprised me to learn that this was the first time that many of these dedicated individuals had ever even heard of the existance of these exchange lists. All those who were introduced to them, agreed that they would be an invaluable tool in dealing with the ever pressing problem of bending the diet to the diabetic and not the diabetic to the diet.

In preparation to speak here today, I with the help of several others attempted to inform ourselves of the prevailing problems in teaching diabetics. After communicating with several

local health departments in Texas, we found that one of the major problems was the formulation of diets acceptable to the individual diabetic's food habits. We found that diabetic teaching materials such as cultural food exchanges are still not widely available.

So the Mexican-American diabetics, with their Anglo diets written in Spanish perceive their only options as being:

> "to control diabetes by following the bland, tasteless Anglo diet",
>
> OR
>
> "forget about diabetes and eat the tasty, familiar, affordable chile con queso, tacos, menudo, etc.".

This dilemma of maintaining the lifestyle, eating familiar foods, and not controlling diabetes may lead the Mexican-American to opt for alternatives to our health care system which folk medicine provides.

"According to Dr. George G. Meyer, professor of psychiatry, The University of Texas Health Science Center at San Antonio, who has had extensive experience working with Indian medicine men and Mexican Curanderos, there are varying degrees of overlap among modern medicine, religion, folk medicine, and different philosophies of life. Since folk medicine is prevalent in the Southwest, physicians are often called upon to deal with the conflicts that can occur when folk beliefs and scientific medicine collide. Dr. Meyer emphasized the importance of the physician's ability to cope with and respect folk medical practices. Where ever modern scientific medicine is available, accessible, compatible, and afforadable,

folk medicine is ultimately replaced. He pointed out that the services offered by faith healers and curanderos (the commonly used term for Mexican-American folk healers) are available, affordable, have no barriers, no waiting lists". Texas Medicine, Vol. 71, Feb., 1975, pg. 96.

I recently became aware of an alternative method used by some Mexican-Americans in my community to alleviate their diabetes. This involves brewing a tea for daily consumption from this package of herbs. I have since attempted to discover the content of this package, but to date have only met with failure.

I purchased these packages at a neighborhood establishment which was a combination grocery store, bakery, with a specialty in "medicinal" herbs and religious articles. When I asked the store owner what I should do if I was very ill with diabetes, he suggested going to the Diabetic Clinic at the city-county hospital held on Wednesdays at 7:00 a.m. and if I could wait until one of the doctors would see me, "it might be about noon", he said, I might get some help.

Unfortunately folk medicine is often viewed as an intruding or competing brand of medicine. Specialized training is necessary that gives the health professional more than a superficial knowledge of culture. Our approach to dealing with diabetes can be self defeating, it can drive the sick out of the medical system, away from medical services which it seeks to deliver. I maintain that the health educator must have a capacity for understanding from the other

person's point of view. We must take into full consideration, before suggesting health alternatives to the diabetic: Age, type of employment, level of education, and economic resources of the family.

RECOMMENDATIONS

1. That educational facilities graduating health professionals, and paraprofessionals provide learning experiences in cultural anthropology.
   Health providers must be aware of the relationship between the relevance of what we teach, to the lifestyles of the patient, if our objective is to help the diabetic.

2. Funds for diabetic educational materials must be made available and given the same priority as insulin and syringes.
   These educational materials must be produced and field tested regionally and not nationally if they are to be effective. The Spanish materials printed in the East may be applicable to Puerto Ricans, but they will not be useful to the Mexican-American in South Texas.

3. Behavioral Science research is needed to ascertain the best methods in teaching diabetics to adapt to new health behaviors.
   Health educators need to know the principles of motivation.

Unfortunately for diabetics today, there remains a wide gap between presently known treatments for diabetes and its cure. However, the real tragedy lies in the needless gap between present day knowledge of diabetic care and its unavilability to countless known diabetics.

Testimony Presented to the
National Commission on Diabetes
by: Dr. Morton B. Waitzman
Director for Opthalmic
Research

Members of the National Commission on Diabetes, Ladies and Gentlemen, and, most important of all, those of you who are afflicted with or have loved ones afflicted with diabetes mellitus:

While I shall, for the most part, restrict my comments to the blindness which results from long term diabetes, there should be no need to remind this audience that as goes the blood vessels of the eyes so goes the blood vessels all over the body in the long-duration diabetic. The present state of our knowledge is such, and is so inadequate, that we can be little more encouraging to those afflicted with diabetes today than we were prior to the discovery and clinical use of insulin in the late 1920's. Statistics provided by the Research to Prevent Blindness, Inc., state that "among persons with diabetes for 11 years or more the disease diabetic retinopathy is present in 64% of these patients. For those who have had diabetes for 15 to 20 years, as many as 93% have diabetic retinopathy."

There are 5,000,000 known diabetics in the United States and probably 2-3 times that number who are undiagnosed. As of May, 1973, approximately 60,000 of these diabetics were blind from diabetic retinopathy.

Concerning the history of the juvenile diabetic, Safir and Rogers (Amer. J. Ophthalmol., 69:387-392, 1970) state that "Confining the history to father, mother, siblings, and maternal and paternal grandparents, we found that 60% of our patients have a positive family history of diabetes.". This high incidence of juvenile diabetes in families having a strong history of diabetes has been reported from various other sources as well.

As of this date, the government is spending approximately $5000 per year per patient for rehabilitation and training of these blind patients or $300,000,000 per year. At the same time, a total of $2,000,000 per year is spent by the government for research in diabetic retinopathy - therefore, for every $150 spent for rehabilitation and training relative to the problem of blindness alone, only $1 is spent for research. Based on the present rate of increase it is estimated that there will be 1/2 million persons blind from diabetic retinopathy by the year 2000. Therefore, approximately 2 1/2 billion dollars per year will be spent for rehabilitation and training, while if the present trend of decreasing money spent for research continues, only 1.8 million per year will be spent for research. The biggest tragedy of this is - that between the ages of 20-60 - the prime of one's life - diabetic retinopathy is the chief cause of newly reported blindness in the United States. The loss in earning power - to say nothing of personal and family suffering - can conservatively stated to be billions of dollars per year.

Most of the above refers to the logistical and human problems of juvenile diabetes relative to the development of blindness in the juvenile diabetic. It would take little imagination to estimate the staggering costs and human suffering associated with the generalized blood vessel disease in the diabetic which, usually, within 5-10 years of the onset of diabetic retinopathy, leads to serious illness or death associated primarily with heart and kidney disease. In other words, and as stated in the January, 1975, issue of Annals of Ophthalmology in an article by Berkow, Patz and Fine, the blind diabetic has a greatly reduced life expectancy once his retinopathy has progressed to the point of blindness.

Of an original study population of 95 blind diabetics in 1964, this latter group of investigators found that 40 were known to be dead 9 years later in 1973. The average interval from onset of severe blindness to death in 37

of the 40 who had died was 9.4 years. The mean age at death was 43.2 years for this study group. These latter data were also cited in the Winter 1974-1975 issue of the Sight Saving Review.

What can one do about diabetic retinopathy? There are various avenues of approach being considered to prolong useful eyesight. For example, in a recent report by Duane in the May, 1975, issue of the journal "Geriatrics", much emphasis is placed on the use of the argon laser to prevent continuing hemorrhage in the retina. The merits of laser treatment are the subject of a national study being conducted by various institutions around the country, and the final evaluation has yet to evolve. One thing is certain, however. Laser treatment may prolong useful vision in diabetic retinopathy, but it certainly will serve no purpose in prolonging life in the diabetic.

There are large numbers of investigative considerations relative to the treatment of diabetes in general and diabetic retinopathy in particular. These include research on insulin antibodies, pancreatic islet transplant, etc. Another investigative consideration pointed out in the 1974 Yearbook of Ophthalmology discusses the role of blood platelets in the pathogenesis of diabetic retinopathy and cites correlations found between duration of retinopathy and the clumping of the platelets in the blood. There seems to be some correlation between this clumping of the platelets and the extent of retinopathy in diabetic patients. From this latter, it would be logical to assume that this involvement of platelet clumping would manifest itself in the other blood vessels of the body - particularly in the vital organs such as the heart, kidney and brain. A rapidly developing consideration is that if we can somehow learn how to control or prevent this clumping of these blood cells, then it is possible that this can become a tool in the treatment of diabetes. It is, for example, of interest to note that common variety aspirin is capable of interfering with this platelet clumping mechanism. It is of further interest to note that the scientific community agrees that the prime mechanism of this aspirin effect is to help regulate the concentration of a group of naturally occurring fatty substances referred to as "prostaglandins". An imbalance of these prostaglandins, then, if corrected through some means such as appropriate aspirin therapy may represent an innovative approach in the treatment of diabetic retinopathy. These studies are still in the pilot stages in many laboratories as well as in our own laboratory at Emory University, but reflect one of the various areas of investigation which must be supported if we are to do something about the devastation of the proliferating tragedy resulting from diabetes and its consequences. Can we afford <u>not</u> to look for innovative approaches? I would submit that the answer to the latter is clearly in the negative.

I can only summarize all that I have said with the comment that it is tragic that we spend over a $150 to support and maintain the diabetic in rehabilitation efforts which may be life comforting but certainly not life extending; while we spend for each of these $150 just one dollar for research. There is <u>clearly</u> an imbalance in our thinking. Thank you.

Testimony Presented to the
National Commission on Diabetes
by: Mrs. Sara C. Ashcraft

STATEMENT FOR PRESENTATION BEFORE THE

NATIONAL COMMISSION ON DIABETES

Atlanta, Georgia

July 7, 1975

Mr. Chairman, ladies, and gentlemen, I am most appreciative for this opportunity to appear before you members of the National Commission on Diabetes. I am Sara Ashcraft of Charlotte, North Carolina, a member of the board of the Metrolina Chapter of the Juvenile Diabetes Foundation.

My youngest child, Jane, was diagnosed a diabetic when she went for a routine physical examination at age 12 by our pediatrician. Immediately, he suggested she be placed under the care of an endocrinologist. This was a tremendously emotional time for her. Not only was she going through adolescence but was faced with being told she had a disease for which there was no cure. And now seven years later the same is true.

This is the reason I am so deeply concerned and why I am here today. I along with all parents of diabetics will not give up in our effort to open the eyes of those who have the opportunity to see that diabetes is no longer the disease that will afflict one out of five people by 1980--and the disease that very little is being done about. In the opinion of many researchers a cure for diabetes will also reduce the incidence of many other associated ailments, including heart disease, blindness, stroke, hypertension, and kidney failure. So I emphasize the fact that research in diabetes will probably affect breakthroughs in these

major areas of concern. This fact makes it imperative that diabetes research should no longer be a low priority on the list for government funding.

Through the past years I have worked for many other foundations and causes. But now my greatesteffort will only be in this area. I feel an urgency to do what I can today so that Jane and all the other diabetics one day will not have to wake up each morning to reach for that syringe because this disease deteriorates every part of their bodies. As Dr. Best, the discoverer of insulin, said it is up to the parents of diabetic children to be the impetus in bringing about great changes in the area of funding for research.

You on this Commission are in the enviable position to do something about this too long neglected disease. I implore you. Don't wait another day--do it now.

Thank you.

Testimony Presented to the
National Commission on Diabetes
by: Mr. John Laurents
American Diabetes Assoc.
North Carolina Affiliate

FOR THE DIABETES COMMISSION

I am speaking to you as a parent of a child who has diabetes. My wife and I have four children. My oldest daughter, Ann, who is 10 years old, has had diabetes since she was a baby. She was 11 months old at the time.

As a parent, the promise of a "Cure" is both exciting - - and heart-breaking. Exciting because a cure within a few short years is possible . . . heart-breaking, because we may not see it soon enough to prevent the possible severe complications of diabetes . . . and heart-breaking because we may not see a cure in our lifetime.

The great attraction of beta cell transplants is exciting . . many researchers are now working in this area and a year ago this was a "promise" for a "cure." The great attraction of beta cell transplants is heart-breaking because researchers have now met several barriers.

I would be satisfied with a "cure" in the form of the manageable treatment of diabetes that would prevent the long term complications . . . and this I believe we may be close to.

It concerns me that so many diabetics do not have access to an educational program. They couldn't get it even if they knew how to ask. Most hospitals do not have an inpatient education program. Why? Because insurance companies traditionally do not pay for "patient education."

I have learned that an overwhelming majority of diabetics are medically under-served. Remember that people who are medically under-served are not necessarily poor.

I believe that half of the success of dealing with your childs diabetes is knowing that your child is getting the best possible care and that you know enough about the basis rudiments of management to feel reasonably confident with your responsibilities as a parent.

To the issues to which this Commission is addressing itself - I must speak for parents who are not here who are saying "teach me how to properly manage my childs diabetes so that I may feel resonably confident in my responsibility as a parent." And further, "be wise in your decisions regarding the allocation of research funds and provide for an effective coordinated national effort."

Testimony Presented to the
National Commission on Diabetes
by: Dr. Edwin Bransome, Chief
Metabolism and Endocrinology
Medical College of Georgia

Summary of Comments at the Public Hearing
of the National Commission on Diabetes
Atlanta, Ga. July 7

By
Edwin D. Bransome, Jr., M.D.
Chief, Division of Metabolic and Endocrine Disease
Department of Medicine, Professor of Medicine
Medical College of Georgia Augusta, Ga.

The indictment of two oral antidiabetic drugs as etiologic factors in cardiovascular disease in publications of the University Group Diabetes Program and in the lay press, may or may not be well reasoned. Although our group at the Medical College of Georgia shares certain opinions of the validity of the conclusions reached, such arguments are beside the point of my comments. Suffice it to say that many of the patients given tolbutamide or phenformin on UGDP protocols had fasting blood sugars of less than 180 mg% and would in our clinical setting at least, have been candidates for dietary control alone.

At the risk of reiterating facts well known to the Commission members, I would like to point our that

a. The mechanisms of action and side-effects of oral agents- even sulfonylureas - may vary considerably. The antidiuretic and diuretic actions of different sulfonylureas are illustrative. Blanket indictments based on effects, however tenuous or firm, of a large class of drugs border on the irresponsible.

b. The pharmacology and pharmacokinetics of oral agents have been meager. Only recently has our group
Braselton et al. Diabetes 24:(Suppl 2) 396 (1975)
Braselton et al. Anal. Letters 8:301-313 (1975)
devised accurate practical methods for the measurement of tolbutamide, chlorpropamide and their metabolites. We hope to look at other sulfonylureas as well.

c. Some patients are unquestionably benefitted by oral sulfonylureas. We now can define three such groups of patients:
(i) "insulin intolerant" maturity onset diabetics who maintain fasting blood sugar levels of 300 mg% without insulin or with insulin (more than 100 units per day) who have painful fatty livers. Three such patients in our clinic have become aglycosuric, have decreased fasting sugars to less than 175 mg% and have had diminished liver size and symptoms after several months of chlorpropamide 500 mg per day. None responded to low colorie diets.
(ii) lipoatrophic diabetics whose reactive hyperinsulinemia and hypoglycemia has been ameliorated by sulfonylureas.
(iii) "pre-diabetic" reactive hypoglycemic patients with aberrant insulin kinetics. Treatment with tolubatamide has had dramatically beneficial effects.

d. We are on the verge of discovering how some of the sulfonylureas work. Gerald Reaven's Group at the Stanford University Medical School and ours have some collaborative work in this area planned. Dr. Reaven has given me permission to recount the following as yet unpublished

findings concerning maturity onset diabetics placed on chlorpropamide.

(i) decreased insulin binding activity of lymphocytes from these patients was partially reversed by treatment with chlorpropamide.

(ii) resistance of hepatic gluconeogenesis to exogenous insulin (characteristic of maturity-onset diabetics) is also diminished after treatment with chlorpropamide.

It is well known that none of these agents is insulinogenic after several months of chronic use despite continued hypoglycemic effects.

Our own group has examined a small group of patients with profound chlorpropamide-induced hypoglycemia and has concluded that

(i) chlorpropamide-induced clinical hypoglycemia may be present despite serum drug levels much lower than those found in hyperglycemic diabetics or euglycemic normal controls.

(ii) a protracted suppression of hepatic gluconeogenesis (requiring the presence of insulin) can be presumed.

(iii) at present it is not clear whether hypoglycemia may be related to high levels of a metabolite of chlorpropamide, the disappearance of which may be related to renal clearance. We are presently measuring the pharmacokinetics of known metabolites: 2-hydroxy-chlorpropamide, 3-hydroxy-chlorpropamide, para-chlorobenzene-sulfonamide, and para-chlorophenyl-sulfonyl-urea.

In Conclusion, we hope to draw the Commission's attention to the importance of continuing and initiating additional research on antidiabetic oral agents, despite the political furor concerning them. To our knowledge at least there are few studies now going on and no funding by DHEW or any other government agency.

Testimony Presented to the
National Commission on Diabetes
by: Mrs. William C. Davis

Dear Sir:

My husband and I have 5 boys. Last summer, when the youngest was 13, he was diagnosed as being diabetic. I am so thankful that his attitude has been one of acceptance and willingness to learn. I am not complaining about the medical care he has received, but I am finding that agressive pursuit of up-to-date treatment and knowledge is up to me.

What's needed is a more cpmprehensive educational approach, as well as research for a cure, and research for prevention. All of this takes MONEY--- ours and yours.

Sincerely,

Elaine L. Davis

Testimony Presented to the
National Commission on Diabetes
by: Ms. Sydelle Feinman
American Diabetes Association
North Texas Affiliate

DISTINGUISHED MEMBERS OF THE COMMISSION:

MY NAME IS SYDELLE FEINMAN FROM DALLAS, TEXAS. I AM CHAIRMAN OF THE BOARD OF THE AMERICAN DIABETES ASSOCIATION - NORTH TEXAS AFFILIATE. I DEEPLY APPRECIATE THE OPPORTUNITY TO SPEAK BEFORE YOU TODAY ON THE SUBJECT OF DIABETES. I, TOO, AM THE MOTHER OF A DIABETIC CHILD. MY TEN YEAR OLD SON, ERIC, HAS BEEN DIABETIC FOR SIX YEARS AND FOR SIX YEARS I HAVE BEEN DEEPLY INVOLVED WITH THE PROGRAMS OF THE AMERICAN DIABETES ASSOCIATION AND HAVE DEVOTED ALMOST MY FULL TIME TO THE ASSOCIATION FOR THE PAST THREE YEARS. THERE'S NOTHING I HOPE FOR MORE, OR PRAY FOR MORE FREQUENTLY THAN A CURE FOR DIABETES. HOWEVER, NOTHING HAS HAPPENED TO DATE, NOR ANY PROMISES OF THE FUTURE CAN GUARANTEE THAT DIABETES WILL BE CURED IN THREE, FIVE, TEN OR ANY NUMBER OF YEARS. FOR THIS REASON, I SEE THE OVERWHELMING NEED FOR THIS COMMISSION TO APPROACH THE PROBLEM OF DIABETES WITH A BALANCE OF RESEARCH, PROFESSIONAL EDUCATION AND PATIENT EDUCATION. I HOPE THAT MY SON, ERIC, CAN LEAD A LONG AND HAPPY LIFE WITH OR WITHOUT DIABETES. AS A PARENT, HIS DAILY WELFARE MUST BE MY UTMOST CONCERN. THE STANDARDS OF CARE FOR DIABETICS IN MANY AREAS OF THE COUNTRY IS INADEQUATE DUE TO PHYSICIANS' LACK OF SPECIAL TRAINING. WHILE THE CURE FOR DIABETES IS OUR ULTIMATE GOAL, ONE OF OUR IMMEDIATE OBJECTIVES MUST BE THE FULLEST, LONGEST LIFE FOR DIABETICS POSSIBLE.

A "CURE" WOULD NOT RESTORE VISION, WOULD NOT REGENERATE LIMBS, WILL NOT INCREASE THE FUNCTION OF VITAL ORGANS THAT HAVE DETERIORATED OR BEEN LOST DUE TO THE COMPLICATIONS OF DIABETES.

EACH DAY WE HAVE TO LIVE WITH DIABETES. WHAT I KNOW ABOUT IT AND WHAT I CAN LEARN ABOUT IT IS LARGELY LIMITED BY MY COMMUNITY. WE ARE FORTUNATE TO HAVE A FACILITY IN DALLAS, ... BUT IT IS NOT ENOUGH FOR DALLAS. WHAT DO WE DO ABOUT THE HUNDREDS OF SMALLER COMMUNITIES WHERE THE NEED IS JUST AS GREAT? IF KNOWLEDGE IS GOLD, THEN THE DIABETIC AND HIS FAMILY ARE PAUPERS.

PERHAPS THE MOST IMPORTANT SECTION OF THE DIABETES ACT IS THE IMPLEMENTATION OF REGIONAL EDUCATION CENTERS TO PROVIDE TWO VITAL RESOURCES FOR THE COMMUNITIES: TO TRAIN PHYSICIANS, NURSES AND OTHER PARAMEDICAL PROFESSIONALS TO ACCEPT AN INCREASING RESPONSIBILITY IN THE EDUCATION AND MAINTENANCE OF DIABETICS AND TO TAKE THIS HOME TO THEIR COMMUNITIES; AND SECOND, TO OFFER AN INTENSIVE IN-PATIENT AND OUT-PATIENT PROGRAM OF EDUCATION AND REGULATION FOR DIABETICS. WHILE THE DECLINE OR IMBALANCE OF RESEARCH DOLLARS IS ALARMING, PERHAPS THE IMBALANCE IN THE FACILITIES AND PERSONNEL TO PROPERLY TREAT THE GROWING DIABETIC POPULATION IS EVEN MORE ALARMING. AS THE PHYSICIAN'S PATIENT LOAD RISES, THE TIME ALLOWED PER PATIENT DECREASES, ADDING TO THE PROBLEM. AS WE UPGRADE THE QUALITY OF MEDICAL CARE BY BETTER EDUCATING PHYSICIANS, NURSES AND PARAMEDICAL PERSONNEL, WE SHOULD FIND THAT SOME OF THE DISCOMFORTS ASSOCIATED WITH DIABETES CAN BE ALLEVIATED BY THE PATIENT HIMSELF, THUS

REQUIRING LESS INTENSIVE CARE.

IN THE AREA OF RESEARCH, WE ARE NOT APPROACHING THE STATUS OF THE MANHATTEN PROJECT WHERE "X" AMOUNT OF DOLLARS = A CURE IN "X" AMOUNT OF YEARS AND TWICE AS MANY DOLLARS = A CURE IN ONE-HALF THE TIME. SO MUCH IS YET TO BE DONE IN THE UNDERSTANDING OF DIABETES. IF WE CURED ALL THE DIABETICS TODAY, WE WOULD HAVE MORE TO CURE TOMORROW, AND TOMORROW, ... AND TOMORROW. WE ALL LIVE OUR LIVES FOR THE FUTURE AND OUR CHILDREN'S FUTURES AND OUR GRANDCHILDREN'S FUTURES. BECAUSE OF MY SON'S DIABETES, HIS FUTURE MAY NOT BE THAT BRIGHT, AND THE VERY EXISTENCE OF MY GRAND-CHILDREN IS IN DOUBT. I WOULD PREFER TO SEE MY SON CURED OF DIABETES, ... BUT IF NOT, I WANT TO SEE HIM THE HEALTHIEST, HAPPIEST DIABETIC POSSIBLE.

THANK YOU.

Testimony Presented to the
National Commission on Diabetes
by: Mr. Zane Frakes

The Testimony of Zane Frakes, age 14, of Albany Georgia given before the National Commision on Diabetis in Atlanta on July 7, 1975.

I I was 4¼ at the age of onset.

II How it has affected me:
A-In school teachers and students are noticeably cautious about my activities.
B-Given Special attention.

III Problems presented:
A-Have to take Medication daily.
B-Sometimes could not participate in certain activities because I had to eat or run a urine.test.
C-Have to follow a strict diet and eat at certain times each day.

IV Need for funds and Chapter Organization:
I feel there id a great need for more fund raising activities because while research is going on centers for detection and maintenance must stay in operation.

V How I feel:
I care what happens to diabetics like myself but only funds can operate places for research TO FIND A CURE.

Thank you,

Zane Frakes

Zane Frakes
407 Elizabeth Avenue
Albany, Georgia 31705

Testimony Presented to the
National Commission on Diabetes
by: Mrs. Mary Helen Goodloe
Georgia Department of
Human Resources

RICHARD M. HARDEN / Commissioner
T. [illegible]IM) PARHAM / Deputy Commissioner

GEORGIA DEPARTMENT OF HUMAN RESOURCES

618 PONCE DE LEON AVENUE, N.E. / ATLANTA, GEORGIA 30303

August 22, 1975

Statement of Mrs. Mary Helen Goodloe, R.D., Dietary Consultant, Health Care Education Unit, Adult Health Section.

TO: Commission on Diabetes

RE: Recommendations Regarding Joint Research Efforts

During the past 15 years I have had considerable experience in working on studies concerning the realtionship of various dietary components to the development of atherosclerotic cardiovascular disease (a Trappist and Benedictine Monk Study, Georgia Department of Public Health, 1957-1965). The data collected in this and in many other epidemiological studies during this period made valuable contributions to our knowledge in regards to the etiology of atherosclerosis and its complications. However, one of the difficulties encountered was that each study had its own approach and its own protocol, and there was no standardization during this time. Our methodology varied from that used by others as regards a variety of things, for example, collection of dietary data, analysis of blood specimen, reading of electrocardiograms, etc. Because of these variations in procedures it was very difficult, if not impossible, to compare one study with the other or to pool data together where this seemed necessary. Because of this it has now become necessary to mount some other large, standardized, collaborative studies, such as the MRFIT program and the hypertension identification and follow-up program, so that comparable procedures and results can be obtained.

On the basis of this experience I would recommend that investigations supported by the Diabetes Commission which aim at answering similar types of questions be standardized in such a manner that the results of one study can be compared in a valid way with the results of another. It would appear that this would be feasible if before contracts or grants are awarded, the potential investigators would come together and agree upon a common goal and common methodology of approach.

For example in my own field of nutrition, there are a number of ways of collecting dietary information on individual subjects such as the method of the diet record technique, the method of dietary diary or recall or, as another possibility, the analysis of phantom meals. All these techniques are useful but each will yield a result unique to itself. The same thing can be said of the analysis of dietary information collected in terms of its various nutrient and mineral components. There are a number of different tables of reference which could be utilized, but if there was not agreement on a common method of analysis it would be difficult to compare the results of one study with another. I would like to bring to your attention in this regard the existence of the International Dietary Information Foundation, Box 38143, Atlanta, Georgia, 30334, which has been set up for the specific purpose of making available to collaborative studies a systematic method of dietary collection and analysis.

If I may be of further help in formulating the projected plans, please do not hesitate to call on me for further information.

MHG:kb

CONSUMPTION OF FOOD TOTAL FOR MIDDAY MEAL BY CASE

TO GRAMS PROTEIN	AP EP PROTEIN	RAW COOKED FAT	PROTEIN FAT	FAT CHO	CHO CHO
CALORIES 420.	MOISTURE 451.8			ALCOHOL 0.0	CAFFEINE 0.0
TOTAL PROTEIN 34.9	N-PROTEIN CONVERSION FACT.	ANIMAL PROTEIN 33.5	VEGETABLE PROTEIN 1.4	MIXED PROTEIN 0.0	PROTEIN UNKNOWN 0.0
TRYPTOPHAN 0.403	LYSINE 2.854	METHIONINE 0.804	CYSTINE 0.346	PHENYL ALANINE 1.320	
TOTAL FAT 15.5	ANIMAL FAT 0.5	FISH FAT 3.5	VEGETABLE FAT 11.5	HYDROG. FAT 0.0	CHOLESTEROL 0.056
SFA 3.5	USFA 10.7	UNKNOWN FA 0.8			
MYRISTIC 0.1	PALMITIC 2.8	STEARIC 0.6	OTHER KNOWN SFA 0.1	UNKNOWN SFA 0.0	
OLEIC 3.2	LINOLEIC 4.7	LINOLENIC 0.3	ARACHIDONIC 1.5	PUFA TOTAL 6.6	UNLISTED & UNKNOWN SFA 0.8
CHO TOTAL 37.2	TOTAL SUGARS 32.4	STARCH 0.0	CHO KNOWN NOT LISTED 2.8	CHO UNKNOWN 1.3	FIBER 0.8
FRUCTOSE 2.1	GLUCOSE 2.7	LACTOSE 12.5	MALTOSE 0.0	SUCROSE NATURAL 2.7	SUCROSE ADDED 12.4
TOTAL SUCROSE 15.0	REDUCING SUGARS 5.4	PECTIC SUBSTANCES 0.7			
VIT A 1251.	CAROTENE	VIT E 0.00717	VIT D	CHOLENE	
THIA 0.00021	RIBO 0.00060	NIACIN 0.0115	VIT B6 0.00058	VIT B12 0.00290	ASCORBIC ACID 0.033
ASH 6.32			CALCIUM 0.330	PHOSPHORUS 0.474	IRON 0.0024
SODIUM 1.643	POTASSIUM 0.620	MAGNESIUM 0.057	IODINE 0.05744		

Testimony Presented to the
National Commission on Diabetes
by: Mr. J. Timothy Shelnut

TESTIMONY BEFORE NATIONAL COMMISSION ON DIABETES

Until about 4 1/2 years ago my wife and I had never known or known of anyone who was a diabetic. As far as we were concerned things such as this would never happen to our family, it always happened to other people. But overnight we were to find out that we had to start a whole new way of life.

Our son "Bubba" was 11 months old when diagnoised as having diabetes, we were shocked, numb and dumbfounded at the thoughts of what lay ahead for us. At first, we thought well it could have been something alot worse like Cancer or something, but now over the years that we have had to cope with this disease and live with it every minute of every day and see the effects of it happening to our son and knowing the statistics of this dread disease, we fully realize that all our hopes float in the future.

Only the parents of diabetic children can realize what a nightmare it is to live with the minute to minute anxiety of wondering weather or not your child could have an insulin reaction at anytime, day or night. "Bubba" requires 24 hour surveilance as do all diabetic children. To be awakened in the middle of the night by your child screaming, convulsing and hallucinating is now a common occurence in our home, but let me tell you now, it is something you never get "used to", no matter how often it happens, it really tears you apart.

When you stop and think about a 5 1/2 year old child who has had diabetes for 4 1/2 years his future looks rather dim. Knowing what the statistics show about death and blindness alone scares us to death. And the fact that every day of his life this disease is working away, damaging his vital organs. This certainly no comforting thought to live with. Just to think of the future which lies ahead for our son. By the time he is 19

there's a good chance he could be blind or by the time he reaches 27 years of age he will be dead. And what about him, what thoughts will he have when he is old enough to read and finds out that these statistics are true and that they apply to him?

When our eight year old daughter ask us, "Why does "Bubba" have to be diabetic?" We have no answer for her except that there is no cure for diabetes. This has got to be changed! Tomorrow is only a big question mark for us if something isn't done soon, we need a cure for diabetes, all that we are doing now is buying a little time with the use of insulin. We are not out for pity, we don't want any pity. What we want is for people to realize what can happen to any diabetic at any time and that it's going to take money to find a cure. And we feel that money is a small price to pay for sight and life.

Any person who could have seen "Bubba" when he was an infant or now as a small child receive his daily injections of insulin or struggle with him while he is in insulin shock, watching him having convulsions, or see him paralyzed as a result of this or lay in a coma, would follow any procedure or plan which could eventually lead to a cure for diabetes. Yes, the cold hard facts are that we know what diabetes is, we know what it does to the body, and we know what to do to cope with the situation. The only thing we don't know is, the cure, what is the cure? Won't you please give us the chance to find out? The future of our children is up to us now.

Testimony Presented to the
National Commission on Diabetes
by: American Diabetes Association
North Carolina Affiliate

For The DIABETES COMMISSION

The Board of Directors, in behalf of the membership of the North Carolina Affiliate of the American Diabetes Association wishes to re-affirm its position with regard to the National Diabetes Mellitus Research and Education Act, Public Law 93-354.

The mandate of Congress provides in that law that "the Secretary of the N I H shall provide for development or substantial expansion of centers for research and training in diabetes mellitus and related endocrine and metabolic disorders." The significance of the mandate is that; "the centers shall provide a proper balance of basic and clinical research in the diagnosis and treatment of diabetes and its complications, and in related endocrine and metobolic disorders, and shall jprovide training and information programs for physicians and allied health personnel who provide primary care for patients who live in the geographic area served by the center."

Members of the North Carolina Affiliate who wrote, called and visited their Congressmen and Senators are satisfied that the bill provides what they asked for.

In essence, Public Law 93-354 is exemplary of the feelings of the constituency of the Senators and Congressmen who worked so hard to make this law become a reality.

With regard to research, we believe that it is extremely important to coordinate all research at the national level and that a broad spectrum of research be funded. The law provides that research be conducted in related endocrine and metabolic disorders and rightly so. The cause of diabetes may be found in an area presently unrelated.

We would urge the commission to consider the coordination of all agencies dealing with the problem of diabetes both physiological and sociological. For example: State Departments of Social Services will have diabetic clients who's needs must be coordinated with the public Health Dapartment; The Department of Vocational Rehabilitation provides vocational counseling services, job replacement and diagnostic services, both medically and physiologically. Counselors in these areas who had a basic understanding of the physiology of diabetes would better be able to serve their clients.

In a three year study conducted by the Diabetes Project of the North Carolina Regional Medical Program, 71% of the diabetics studied were found to be in poor control. It is interesting to note that these individuals come from all walks of life and received varying degrees of medical care. The main reason for the poor control was the lack of patient education which was due to little or no time and energy expended in the area of instruction on the part of the health professional involved.

Dr. Leona V. Miller undertook an extensive analysis of one hospital's admissions for diabetes. She then implemented a program which showed that many such admissions were preventable and were thus causing an unnecessary drain on the economic resources of both the patient and the public. In correspondence prior to the publication of her studies, Dr. Miller stated that "Out of 1565 cases analyzed we had 111 diabetes comas, 32 hyperosmolar comas, 85 insulin reactions, 35 oral agents reactions and 400 patients admitted with diabetes out of control .. MOST OF THESE ADMISSIONS SHOULD BE CONSIDERED PREVENTABLE." She also stated that 50% of our admissions occured in patients who had their disease less than 5 years.." and from this surmised that "through repeated hospitalizations patients finally learned enough about their disease to keep them out of the hospital; a very expensive form of education."

Upon publication, Dr. Miller's findings showed that - with the implementation of a special program - hospital admissions did, in fact, show a seventy percent proportional decrease. Further, she found that the average number of days spent in the hospital by each clinic patient decreased from 5.6 to 1.74 per year. She pointed out that, nationally, diabetic patients average 5.4 hospital days annually as compared to only 1 day for the nondiabetic, but that morbidity statistics of the diabetic population actually can be improved to the point where they are comparable to that of a nondiabetic population.

One of the main objectives of the Association in 1975 is to coordinate the development of significant continuing education programs for health professionals. Special effort will be made in the areas of public health nursing and nutrition.

The University of North Carolina is one of eleven Universities around the country to win an AHEC contract with the Bureau of Health Manpower Education. The Diabetes Association is currently working with the AHEC program in the development of a continuing education program for health professionals throughout the state. We urge the Diabetes Commission to consider the AHEC concept as a vehicle to implement a nationwide continuing education program for health professionals.

Another area of vital importance is the area of nutrition. During the past year and one half, our Association has been working in cooperation with the State Department of Nutrition in an effort to provide Nutrition Consultants at the health department level. Two years ago there were only 4 such positions in North Carolina. Today there are 25. However, a survey conducted by the State Department of Nutrition revealed that 130 such positions are necessary in order to adequately serve the eligible population of the state. Twenty Five percent of the states population is eligible. An important source of funding is the Title XX Federal Program. Title XX will provide 75% of the funding for this nutrition program. Contracts are now being drawn and the program will begin October 15th. We urge the Commission to

consider the nationwide coordination of this important source of funding which meets the nutritional needs of indigent persons with diabetes.

In closing may I say that this statement of the Board of Directors of North Carolina Affiliate truly does represent the feelings of its members which include, parents, diabetics themselves, physicians, researchers, nurses, dietitians and other allied health personnel and many other individuals who all work so well together toward our common goal of the "Ulitmate Defeat Of Diabetes."

Testimony Presented to the
National Commission on Diabetes
by: Mr. William Clark
Juvenile Diabetes Foundation

There are many acute personal reasons for wanting to see medical technology find a cure for diabetes. The most justifiable ones are having been a diabetic for over 20 years and the additional complications that I have encurred as a result.

Diabetes itself has not been that difficult to live with. The difficulty lies in the secondary characteristics which are directly connected with being a diabetic. Five years ago I lost all eye sight due to diabetic retnopothy and most resently hardening of the arteries has added additional complications. These complications, which occured before I was 36, may be added to by more physical disabilities as time goes on.

Although these physical disabilities do not set me apart from millions of others, it has drastically altered my previous lifestyle and created many frustrating problems. My appeal to you is not just for myself, but with a hope that other diabetics will not have to suffer additional physical disabilities.

It is very important that we maintain an on-going program of treatment for diabetes, but it is by far more important to find a cure.

I personally know how difficult it is to raise money for medical research, but if statistics are correct and there are approximately twelve million diabetics in this country, the problem must be stopped or it will continue to escalate. For these reasons, I am working for the Juvenile Diabetes Foundation to raise money in hopes that a cure can be developed in the near future.

Your help would be greatly appreciated.

William Clark

Testimony Presented to the
National Commission on Diabetes
by: Dr. Kirkwood T. Shultz, Pres.
American Diabetes Foundation
North Carolina Affiliate

STATEMENT OF DR. KIRKWOOD T. SHULTZ
President
AMERICAN DIABETES ASSOCIATION
NORTH CAROLINA AFFILIATE, INC.

For The DIABETES COMMISSION

Presently, diabetes is a major health problem in our country and continues to progressively require more physician time and effort for its control. Unfortunately, in the past the causes and complications attributable to diabetes have not been properly recognized and categorized for adequate evaluation as to their effect on total health care.

At the recent annual meeting of the ADA, it was mentioned that the economic loss to this country as a result of diabetes was approximately 4 billion dollars in 1974. Much of the economic impact of diabetes could be relieved by better understanding and knowledge in the treatment and education of the patient with diabetes. With the ever-increasing number of people developing diabetes, the continued availability of insulin and the current controversy surrounding the use of oral hypoglycemic agents, it is important that we consider finding other means of treating diabetes. Primary consideration should be given to determining the cause and prevention of diabetes. In the last five years, considerable progress has been made in understanding the disease processes of diabetes and hopefully with more funds and more interested researchers working in the area, the particular causes of diabetes may be found, and ultimately we would be able to prevent its occurrence.

Prospectively speaking, if a cause and cure are found, these would probably not be available to the public in less than five years. This still leaves a large segment of the affected population that requires extensive instruction in the care of their chronic illness and consistent, continued medical evaluation and care in the possible prevention of many complications.

The coordination and dissemination of information to health professionals is so vitally important that it must be controlled and directed so that maximum effectiveness might be achieved throughout this country.

I would recommend that the greatest interest be given in determining the cause - - and hopefully - - the prevention of diabetes, and at the sametime, that considerable efforts be made in improving our means of education of all health professionals involved in the management of the patient with diabetes which, in turn, will ultimately benefit the persons with diabetes.

Respectfully submitted,

KIRKWOOD T. SHULTZ, M. D.
President, ADANC

KTS/d

Testimony Presented to the
National Commission on Diabetes
by: Ms. Marilyn Weiser

July 7, 1975

To the National Commission on Diabetes

Dear Dr. Crofford and Distinguished Members of the Commission:

The many speakers at the National Commission on Diabetes Hearing of July 7, 1975 in Atlanta, Georgia so accurately expressed the feelings of parents with diabetic children. There are three points, however, which I would like briefly to stress:

1. No matter how careful we are in the day-to-day care of our children and no matter what medical attention we may seek for them, there is a large possibility that the future fate of these children lies directly in your hands. We as individuals are almost totally helpless.

2. Certainly money with which to discover a cure is uppermost in our minds, but please don't forget those projects which are seeking interim help (and interim in this case may mean years), such as mechanisms to regulate insulin intake--by warning systems and/or insulin dispensers. For so many children these may be as vital as the cure itself.

3. If any money is left from these primary concerns, I hope you will consider its use in the field of education--not only of physicians and medical personnel, but also of the public. The difficulty in obtaining jobs, the jailing of diabetics in insulin shock on charges of drunkenness (even though medical tags were present), and other such practices only add unnecessarily to problems which the diabetic must face.

With immeasurable thanks for your concern,

Marilyn Weiser

(Mrs. C. N. Weiser, Jr.)

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Report of the

National Commission on Diabetes

to the Congress of the United States

Volume II

CONTRIBUTORS TO THE DELIBERATIONS OF THE COMMISSION

Part 2

PUBLIC TESTIMONY AND BIOGRAPHICAL SKETCHES

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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
National Institutes of Health

"The National Diabetes Mellitus Research and Education Act" (Public Law 93-354), signed by the President on July 23, 1974, directed the appointment of a National Commission on Diabetes whose charge was to formulate a long-range plan of research and education to combat diabetes mellitus. The Commission submitted its report to Congress on December 10, 1975.

REPORT OF THE NATIONAL COMMISSION ON DIABETES

Volume I - The Long-Range Plan to Combat Diabetes

Volume II - Contributors to the Deliberations of the Commission

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Report of the

National Commission on Diabetes

to the Congress of the United States

Volume II

CONTRIBUTORS TO THE DELIBERATIONS OF THE COMMISSION

Part 2

PUBLIC TESTIMONY AND BIOGRAPHICAL SKETCHES

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service National Institutes of Health

DHEW Publication No. (NIH) 76-1020

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PART II

A. Public Testimony (Public Hearing 6 and Interviews)

B. Biographical Sketches of Commission Members and Consultants

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LIBRARY U. OF I. URBANA-CHAMPAIGN

STATEMENTS PRESENTED AT PUBLIC HEARINGS

LIBRARY U. OF I. URBANA-CHAMPAIGN

NATIONAL COMMISSION ON DIABETES

McCormick Inn
Chicago, Illinois
August 4, 1975

Public Hearing Number Six

Monday, August 4, 1975

Telegrams	American Diabetes Association Nebraska Affiliate and Nebraska Services to the Visually Impaired The Illinois Association of Workers for the Blind Illinois Dietetic Association - Mrs. Virginia Hendrickson, President The Honorable Abner J. Mikva, Congressman North Suburban Dietetic Association - Harriet Anderson, President Peoria District Dietetic Association Rock River Valley Dietetic Association of Illinois - Sister Veronica Roy, President South Dakota Diabetic Association - Sister Inez Welchert, President South Suburban Dietetic Association - Eleanor Harrington, President Milton R. Young, United States Senator
Public Testimony, Statement Included	Dr. William Daughaday (read by Dr. Constance Pittman) Dr. Arthur Rubenstein Dr. Larry Frohman Dr. Ann Lawrence Dr. Boyd Metzger Dr. Donald Steiner Mr. Harold Rivkin Mrs. Lorraine M. Price Mr. John W. Nowak Mr. Erwin J. Lurie Mrs. Marilyn Furer Ms. Mary Ann Keller Dr. Fred Hofeldt Mr. Art Raymond Dr. James Brosseau

Public Testimony, Statement Included (continued)	Dr. Gary Dunn Mr. Donald Moberg Mr. Harrison Bryant Ms. Catherine Feste Mrs. Raleigh Kuller Dr. Michael Steffes Dr. C. John Baumgartner Dr. Dorothy Kahkonen Dr. John Bryan Mr. Donald Corning Mr. Jerry Fine Ms. Madleine Wake Ms. Sharon Snyder Bloodgood Mr. Gilbert Marks Dr. Francis Zacharewicz Dr. Richard Schnute Mr. Hubert Fowler Ms. Roberta Freeburger Ms. Patricia Girczyc Mr. Richard Roeing Mr. Raphie Raphelson Ms. Lois Fuhrer Ms. Sally Myers Ms. Joan Gaffney Dr. Marvin Schwarz Ms. Sewell Gelberd Dr. Carlton West Ms. Betty Wedman Dr. Helen Wilks Ms. Nike Bradley Ms. Mary Hess Mr. Bernard Malm Mr. Robert Reisman Mr. Ronald Winchester Dr. Fred W. Whitehouse (read by Dr. Donnell Etzwiler)
Statement Submitted without Personal Testimony	Association of American Indian Physicians Ms. Linda Crouse Dr. Ernest M. Frost Mr. & Mrs. Dennis Garrett Dr. E. A. Haunz Ms. Joan Hoover Dr. Martin Katzenberger Ms. Joanne Lane Honorable William A. Steiger

LIBRARY OF THE INDIAN CHAMBERLAIN

Testimony Presented to the
National Commission on Diabetes
by: American Diabetes Association
Nebraska Affiliate

western union **Telegram**

LLH167 (31) CCC119(1340)(2=023748E213)PD 08/01/75 1340
ICS IPMBNGZ CSP
4023481447 TDBN OMAHA NE 18 08-01 0140P EST 1975 AUG 1 PM 2 41
PMS DR OSCAR CRAWFORD, CHAIRMAN, NATIONAL DIABETES COMMISSION
CARE MCCORMICK HOTEL, PLS DLR MON A.M. BETWEEN 9A-1230P, DLR
CHICAGO IL
AMERICAN DIABETES ASSOCIATION NEBRASKA AFFILIATE AND NEBRASKA
SERVICES VISUALLY IMPAIRED APPRECIATE WORK OF COMMISSION. EAGERLY
AWAITING COMMISSION'S FINDINGS.
PRESIDENT ROBERT R RECKER M.D.
NNNN

WF-1201 (R5-69)

Testimony Presented to the
National Commission on Diabetes
by: Illinois Association of
Workers for the Blind

western union **Telegram**

LLF064 (21) CCG048 (1013) 2-021255E216 PD 08/04/75 1012
ICS IPMBNGZ CSP
3123417555 TDBN CHICAGO IL 105 08-04 1012A EST
PMS DR OSCAR CROFFORD, CHAIRMAN

AUG 4 AM 10 33

NATIONAL COMMISSION ON DIABETES

MCCORMICK INN, DLR 2-021255E216-1013
23 AND LAKESHORE DR
CHICAGO IL 60616
THE ILLINOIS ASSOCIATION OF WORKERS FOR THE BLIND RECOGNIZES THAT DIABETES IS THE NUMBER ONE CAUSE OF BLINDNESS TODAY AND RECOMMENDS THAT THE NATIONAL COMMISSION ON DIABETES EMPLOY A FULL TIME PROFESSIONAL PERSON TO DEVELOPE AND EVALUATE SERVICES FOR THE DIABETIC BLIND. IN ADDITION THE IAWB SUPPORTS THE AMERICAN DIABETES ASSOCIATION RECOMMENDATIONS FOR: 1. MORE TEACHING AIDES TO BLIND

BF-1201 (R5-69)

western union **Telegram**

LLF064 (2)

PERSONS IN BRAILLE TAPE AND LARGE TYPE 2. TO PROVIDE ADDITIONAL PERSONNEL TO MAKE HOME VISITS (DOCTORS, NURSES, SOCIAL WORKERS, NUTRITIONISTS) 3. TO RESEARCH AND DEVELOPE AN INSULIN SYRINGE WITH STABLE AND CONTROLLED DOSES FOR USE BY THE VISUALLY IMPAIRED.
THE LEGISLATIVE COMMITTE OF THE ILLINOIS ASSOCIATION OF WORKERS FOR THE BLIND
NNNN

Testimony Presented to the
National Commission on Diabetes
by: Illinois Dietetic Association

western union **Telegram**

LLH166 (36) CCG204(1728)(2p029795E214)PD 08/02/75 1728
ICS IPMBNGZ CSP
2172353434 NL TDBN MATTOON IL 104 08-02 0528P EST 75 AUG 2 PM 5 41
PMS OSCAR CROFFORD, CHAIRMAN

NATIONAL COMMISSION ON DIABETES, DELIVER BY 9AM MONDAY MORNING
HEARING ROOM AT DESTINATION ADDRESS 1728— 1-029795E214
MCCORMICK INN 33RD ST AND LAKE SHORE DR
CHICAGO IL 60616
DEAR CHAIRMAN CROFFORD:
ON BEHALF OF 476 MEMBERS OF THE ILLINOIS DIETITIC ASSOCIATION I WISH
TO SUPPORT THE TESTIMONY OF THE REGISTERED DIETITIANS TO BE GIVEN TO
THE NATIONAL COMMISSION ON DIABETES ON MONDAY AUGUST 4 IN CHICAGO.
SURELY QUALIFIED NUTRITIONISTS WILL BE INCLUDED IN THE ACTUAL
RESEARCH WHICH IS CONDUCTED TO IMPROVE THE WELFARE OF THE
DIABETES-MELLITUS PATIENT.

BF-1201 (R5-69)

western union **Telegram**

llh 166—

AUG 2 PM 5 41

THE DIETETIC PROFESSIONALS MUST BE INCLUDED AS A VITAL PART OF THE
HEALTH CARE TEAM WHICH UTILIZES RESEARCH RESULTS IN THE DIETARY
EDUCATION OF ALL PERSONS AFFLICTED WITH DIABETES.
OUR ORGANIZATION APPRECIATES YOUR CURRENT WORK UNDER PUBLIC LAW
93-354.
YOURS TRULY,
MRS VIRGINIA HENDRICKSON, PRESIDENT
ILLINOIS DIETETIC ASSOCIATION
NNNN

Testimony Presented to the
National Commission on Diabetes
by: The Honorable Abner J. Mikva
U.S. House of Representatives

western union **Telegram**

LLE062 (21) CCD033(1606)(2-012075E215)PD 08/03/75 1606
ICS IPMBNGZ CSP
3128698847 TDBN EVANSTON IL 58 08-03 0406P EST 1975 AUG 3 PM 4 25
PMS NATIONAL COMMISSION ON DIABETES

ATTN MRS BARBARA BROWN, HOLD FOR MRS BROWN MONDAY AM, DLR
MCCORMICK INN ROOMS 14 AND 16 23RD AND BLAKESHORE DR
CHICAGO IL 60616
PLEASE CONVEY TO THE NATIONAL COMMISSION ON DIABETES THAT THE MEMBERS OF CONGRESS ARE LOOKING FORWARD WITH GREAT ANTICIPATION TO ITS REPORT AT THE END OF THIS YEAR. FOR TOO LONG DIABETES HAS NOT HAD THE RESEARCH AND INFORMATION PROGRAMS THAT IT WARRANTS. WE IN CONGRESS ARE COUNTING ON THE COMMISSIONS REPORT TO HELP CORRECT THIS OVERSIGHT.
ABNER J MIKVA US CONGRESSMAN
NNNN

SF-1201 (R5-69)

Testimony Presented to the
National Commission on Diabetes
by: North Suburban Dietetic Asso

western union **Telegram**

LLQ104 (50) CCD183(1436)(2=025035E214)PD 08/02/75 1436
ICS IPMBNGZ CSP
3128258249 TDBN PARK RIDGE IL 22 08-02 0236P EST 1975 AUG 2 PM 3 16
PMS OSCAR CROFFORD CHAIRMAN NATIONAL COMMISSION ON DIABETES,
MCCORMICK INN, DLR BY 9AM AUGUST 4TH, DLR
23RD ST AND LAKESHORE DR
CHICAGO IL 60616
HARRIET ANDERSON PRESIDENT OF NORTH SUBURBAN DIETETIC ASSOCIATION
,$ 43043'3,58,& 150 MEMBERS SUPPORT THE TESTIMONY OF DIETITIANS
FREEBURGER GAFFNEY HESS AND WEDMAN
HARRIET ANDERSON PRESIDENT NORTH SUBURBAN DIETETIC ASSOCIATION
NNNN

BF-1201 (R5-69)

Testimony Presented to the
National Commission on Diabetes
by: Peoria District Dietetic
Association

western union **Telegram**

LLF020 (36) CCE007 (0801) (2=003631E215) PD 08/03/75 0801

ICS IPMBNGZ CSP

3096916278 TDBN PEORIA IL 26 08-03 0801A EST

PMS OSCAR CROFFORD, NATIONAL COMMISSION ON DIABETES CARE MCCORMICK

INN, DLR 9AM MONDAY AUG 4, DLR

23 ST AND LAKESHORE DR

CHICAGO IL

THE PEORIA DISTRICT DIETETIC ASSOCIATION SUPPORTS THE TESTIMONY OF THE DIETITIANS TODAY OF THE NEED FOR FUNDING, TRAINING, AND DEVELOPMENT OF PATIENT EDUCATION PROGRAMS FOR DIABETICS

PEORIA DISTRICT DIETETIC ASSN

NNNN

SF-1201 (R5-69)

Testimony Presented to the
National Commission on Diabetes
by: Rock River Valley Dietetic
Association of Illinois

western union **Telegram**

LLH150 (12) CCA118 (1401) (2)p035698E211 PD 07/30/75 1400
ICS IPMBNGZ CSP
8155430214 MGM TDBN BELVIDERE IL 100 07-30 0200P EST JUL 30 PM 2 32
PMS OSCAR CROFFORD, CHAIRMAN NATIONAL COMMISSION ON DIABETES
MCCORMICK INN 23RD ST AND LAKE SHORE DR
CHICAGO IL 60607
THE ROCK RIVER VALLEY DIETETIC ASSOCIATION OF ILLINOIS GIVES SUPPORT
TO THE DIETITIANS WHO WILL TESTIFY TO THE NEEDS OF DIABETICS AT THE
AUGUST 4TH SURVEY MEETING. SINCERELY
SISTER VERONICA ROY RD, PRESIDENT RRVDA
NNNN

SF-1201 (R5-69)

Testimony Presented to the
National Commission on Diabetes
by: South Dakota Diabetic Assoc.

western union **Telegram**

LLF281 (07) CCA227 (2128) (2=04 625 3E213) PD 08/01/75 2128
ICS IPMBNGZ CSP
6056659371 TDBN YANTON SD 36 08-01 0928P EST AUG 1 PM 10 16
PMS OSCAR CROFFORD MD, CHAIRMAN

NATIONAL COMMISSION ON DIABETES, HOLD 8-4-75 ARRIVAL, DLR
MCCORMICK INN
CHICAGO IL 60611
MR CHAIRMAN I SISTER INEZ WELCHERT, PRESIDENT OF THE SOUTH DAKOTA
DIABETIC ASSOCIATION SUPPORT THE NEED OF FUNDS FOR PATIENT EDUCATION
IN DIABETES CARE. I URGE THE COMMISSION RECOMMEND REIMBURSEMENT FOR
AMBULATORY DIETARY SERVICES
SISTER INEZ WELCHERT
NNNN

SF-1201 (R5-69)

Testimony Presented to the
National Commission on Diabetes
by: South Suburban Dietetic
Association

western union **Telegram**

LLH193 (47) CCG135 (1440) (2=027626E213) PD 08/01/75 1436
ICS IPMBNGZ CSP
3125963210 TDBN HARVEY IL 34 08-01 0236P EST
PMS OSCAR CROWFORD, CHAIRMAN, DLR
NATIONAL COMMITTEE ON DIABETES CARE OF MCCORMIC INN 23 ST AND
LAKE SHORE DR
CHICAGO IL 60616
SOUTH SUBURBAN DIETETIC ASSOCIATION WHILE RECOGNIZING THE NEED FOR
RESEARCH ON DIABETES WHOLEHEARTEDLY FEEL THAT THE GREATER PERCENTAGE
OF FUNDING MUST BE UTILIZED FOR TRAINING AND DEVELOPEMENT PROGRAMS
AS THEY RELATE TO PATIENT EDCATION.
ELEANOR HARRINGTON PRESIDENT ELECT SOUTH SUBURBAN DIETETIC
ASSOCITION
NNNN

AUG 1 PM 3 51

WF-1201 (R5-69)

Testimony Presented to the
National Commission on Diabetes
by: The Hon. Milton R. Young
United States Senate

western union **Telegram**

NHB115(1442)(1-026743A213)PD 08/01/75 1439 (OF TELEPHONED TELEGRAM)
ICS IPMNAWA WSH
10029 GOVT NFWASHINGTON DC 28 08-01 337P EDT
PMS DR OSCAR B CROFFORD CHAIRMAN NATIONAL COMMISSION ON DIABETES
RESEARCH AND EDUCATION
VANDERBILT UNIVERSITY SCHOOL OF MEDICINE
NASHVILLE TN 37203
STRONGLY SUPPORT ADEQUATE FUNDING FOR NORTH DAKOTA REGION FOR
DIABETES RESEARCH AND EDUCATION. HAVE SENT STATEMENT TO YOU TODAY IN
FURTHER DETAIL OF MY INTEEST IN THIS. REGARDS
MILTON R YOUNG UNITED STATES SENATOR

NNNN

322-7311 322-2197

SF-1201 (R5-69)

Testimony Presented to the
National Commission on Diabetes
by: Dr. William Daughaday
Prof. of Endocrinology
Washington Univ. Schl.of Med.

Statement of William H. Daughaday, M.D., representing the Endocrine Society, for presentation to National Commission on Diabetes, August 4, 1975, Chicago, Illinois.

To introduce myself I am a Past-President of the Endocrine Society and Co-editor of its Journal of Clinical Endocrinology and Metabolism. I am also Professor of Medicine at Washington University in St. Louis where I am Director of the Metabolism Division and the Diabetes and Endocrinology Center.

I am here today to express the support of the Endocrine Society in the efforts of the Diabetes Commission in formulating recommendations to the Congress for broad based research in the cause and proper treatment of this important disease.

I would first like to describe briefly the history of this Society, which has had such an important role in stimulating research and disseminating information about the role of internal secretions in the regulation of bodily functions. The Society was officially organized in 1918 as the American Society for the Study of Intern Secretion. Its name was changed to the Endocrine Society in 1952. Its history, therefore, encompasses nearly the entire span of modern endocrine research and its members have been at the forefront of scientific development in the field. While other Societies have appeared which have focused on one or another aspect of endocrinology - the American Diabetes Association, the American Thyroid Society, the American Society for the Study of Human Reproduction and others, it is the Endocrine Society which has provided the cohesive force in the broad field of endocrinology.

Thus, the Society has consistently supported a comprehensive and integrated concept of the endocrine system working through its various tissue targets as the great regulator of cellular metabolism. Any attempt to separate endocrine control mechanisms from the study of metabolism is short sighted.

The membership of our Society, now nearly 3000, includes many disciplines. About half of our members are physicians are directly involved in biomedical research or medical practice. The other half includes individuals who are engaged in teaching and research in medical schools as well as other departments of universities and colleges. Many of our members are investigators in government sponsored laboratories or are engaged in pharmaceutical research and development in industry. This broad background of talents represents a great resource in terms of future developments in diabetic research.

Next I would like to describe the activity of the Endocrine Society. In its annual meetings it provides the most important form for the presentations of new scientific discoveries in endocrinology. It also sponsors workshops on radioimmunoassay techniques and engages in a well established and successful post graduate training course for physicians.

The Endocrine Society makes a major contribution to research in the field by sponsoring two research journals, i.e. Endocrinology and The Journal of Clinical Endocrinology and Metabolism. These journals are preeminent in the field and provide a standard of excellence which is accepted world-wide.

I would now like to consider how the members of the Endocrine Society can contribute to research on diabetes.

The membership of the Endocrine Society recognizes the challenge presented by human diabetes with its extensive morbidity, mortality and economic waste. It is also evident to our membership that existing forms of treatment, even if extended in optimal form to every diabetic in this country would have relatively little impact in presenting or mitigate the effects of this disease. We, therefore, welcome expanded research efforts to overcome this important chronic disease. In view of the fact that our basic knowledge of hormone secretion and hormone action still does not permit us to define accurately the basic defect of this disease, future research efforts must be broadly based and include fundamental studies in general basic endocrinology and not limited to studies of the islets of Langerhans. It is not necessary to remind the Commission that one of the most promising areas of current diabetes research, that of somatostatin effects in the product of a fundamental research in neuroendocrinology An expanded effort in diabetes research should supplement rather than reduce our total effort in fundamental endocrine research. It is obvious that further expansion of the Diabetes Center Program should only be undertaken if additional funds are provided by Congress to the National Institute of Arthritis, Metabolism, and Digestive Diseases. Failure to do so would undoubtedly weaken the research base from which innovative developments applicable to the limited field of diabetes treatment can be anticipated.

The membership of the Endocrine Society has many talents and unique skills which are important in any program of expanded research in the field of diabetes. Already many of its members are leaders in diabetes research and organizers of the prototype diabetes centers. The Society stands ready to assist the Commission in its deliberations and hopes to be in a position to assist in the implementation of recommendations made by the Commission.

Testimony Presented to the
National Commission on Diabetes
by: Dr. Arthur Rubenstein
Department of Medicine
University of Chicago

I am a member of the Endocrine Society and a member of the Editorial Board of its publication entitled Endocrinology. I am also a Professor of Medicine at the University of Chicago, Associate Chairman of the Department of Medicine and Program Director for the Diabetes-Endocrinology Center at the University of Chicago.

I am here to express my support for the Diabetes Commission in its task of formulating a broad plan to deal with the various aspects of the disease, diabetes mellitus. I feel that the time is now ripe for this approach, because the scientific climate and research momentum in diabetes related investigations has developed to a high degree. Important new concepts related to the basic causes of diabetes are being recognized and the application of new knowledge for the improvement of the therapy of diabetic patients is rapidly becoming a reality. It would seem prudent to take advantage of this situation and wisely provide sufficient support to facilitate these promising endeavors. Whether this should take the form of individual investigator grants or Center grants will, I am sure, be discussed by the Commission at other times.

There are, however, a number of specific aspects of this potential support to which I would like to address myself. The first is related to the provision of training funds for individuals who wish to become involved in diabetes related research. Encouragement of young scientist is, in my opinion, one of the best investments of research dollars. Moreover, considering the

present uncertain financial climate for the support of these fellowship programs, I believe that the creation of a significant number of such positions could have a major impact in terms of recruitment of the best young scientists to this area.

The second is related to the scope of research programs which should be supported. We should guard against the temptation to focus our programs too narrowly. Which of us know whether the next important advance in understanding the cause of diabetes will come from the study of autoimmunity, viruses, genetics, epidemiology, animal models with diabetes, or other closely related endocrine glands? Who knows whether the therapy of diabetes will be improved by islet or beta cell transplantation, new drugs, other hormones or artificial pancreas devises? And more to the point, who knows whether these may all be wrong and the next advance will arise from a different field completely, which is not even recognized at present.

In this regard, the basic unity of the field of Endocrinology is most important. The rapid application of new techniques and discoveries which have arisen during the cause of investigation of the pituitary, parathyroids or other endocrine glands to the study of pancreatic alpha or beta cells has saved much time and effort that would otherwise have needed to be spent answering these same questions for this tissue. Moreover, diabetes and its complications are not clearly only a disease of insulin deficiency. The interplay of glucagon and growth hormone are probably of great importance. The problems of reproduction, and pregnancy in diabetes require more information about the functioning of the hypothalamus, pituitary and the gonads. The association of diabetes with autoimmune disorders of the other endocrine glands raises intriguing questions whose answers may be extremely enlightening for understanding the pathogenesis of diabetes. The discovery of a

hypothalamic peptide, somatostatin has provided a new tool for diabetic research and possibly therapy.

I could mention numerous other examples, but I think my major point should be clear. Diabetes research should not be expended at the cost of diminishing support for other areas of endocrinology and basic science in general. Such a step may be counterproductive and harmful to our overall goals in a practical sense. In addition, the philosophical impact of such a move would be to disturb, in some instance, the close and productive interaction between endocrinologists, with a predominant interest in diabetes from others with different commitments.

In conclusion, I wish to thank the Commission for the opportunity to present my views.

Testimony Presented to the
National Commission on Diabetes
by: Lawrence A. Frohman, M.D.
Prof. University of Chicago
Pritzker School of Medicine

PRESENTATION AT THE CHICAGO HEARING OF THE UNITED STATES COMMISSION ON DIABETES

STATEMENT BY: Lawrence A. Frohman, M.D.
Professor of Medicine, University of Chicago, Pritzker School of Medicine and
Director, Division of Endocrinology and Metabolism, Michael Reese Medical Center

DATE OF RELEASE: August 4, 1975

I have been actively engaged in both basic and clinical research in the field of endocrinology and metabolism for the past twelve years at three different medical centers: Duke University, State University of New York at Buffalo, and currently at Michael Reese Medical Center where I am the Director of the Division of Endocrinology and Metabolism and also have responsibility for clinical and training programs in the field of diabetes and endocrinology.

My area of research provides an excellent illustration of why diabetes related research must not be considered as a single entity, but must be viewed as an integrated part of the overall field of endocrinology and metabolism. My particular interests relate to the role of the central nervous system and the regulation of metabolism, with emphasis on the hormones which control carbohydrate and fat metabolism. We have studied the role of the autonomic nervous system on the secretion of insulin and glucagon, on the interconversion of various metabolic fuels, on the regulation of blood glucose, and on the storage and synthesis of fat. These studies have also involved investigations of different brain regions on the control mechanism using techniques of electrical stimulation and destruction and the effects of neuropharmacologic agents.

In all of these studies, the key to the success in planning and interpreting the experiments has been the recognition that one cannot simply look at effects on the endocrine pancreas and ignore the major integrative function of the entire endocrine system, which in many ways influences carbohydrate and lipid metabolism and the specific hormones which appear to be primarily involved in their control. For example, the hormones of the pituitary and adrenal glands exert important roles in modifying both the responses of glucagon and insulin to various stimuli as well as their effectiveness in exerting their effects. The recognition and investigation of these roles has involved scientists whose major area of interest has not been primarily diabetes, but general endocrinology, yet their contributions have been vital to our current understanding of the various factors involved in the regulation of blood glucose. Similarly, a large number of investigators are currently studying abnormalities of metabolism associated with obesity. Investigation of possible psychologic, neural, hormonal, and metabolic alterations on obesity have similarly resulted in a better understanding of the interrelationship between obesity and diabetes despite the fact that these studies were not conducted as part of a "diabetes oriented" research program.

Of perhaps more relevance to the question is the recent work which has been an outgrowth of a field presumably distant from diabetes - neuroendocrinology - which relates primarily to the central nervous system control of pituitary function. The discovery, characterization, and synthesis of a hypothalamic factor, somatostatin, which inhibits the secretion of growth hormone was reported by Dr. Roger Guillemin and his colleagues at the Salk

Institute in 1972. The work of this group of investigators in one of the outstanding laboratories in the field of hypothalamic hormone chemistry and physiology, had had no previous relationship to diabetes. There was an initial possibility raised that somatostatin, by inhibiting growth hormone secretion, might have potential therapeutic value in diabetes in preventing the vascular disease, particularly that resulting in vision loss, which some workers believe is mediated in part by excessive growth hormone secretion. Unexpectedly, subsequent studies revealed that somatostatin has inhibitory effects on several hormones other than growth hormone, among them glucagon and insulin. During the past year the use of this material under appropriate experimental conditions has led to an elucidation of the extremely important role of glucagon hypersecretion in the metabolic derangement associated with diabetes. Moreover, developments within the past few months have indicated that somatostatin is present not only in the central nervous system but also in the pancreatic islets where its function in relation to glucagon and insulin secretion is now under active investigation.

As a result of these findings, diabetes which was once considered to be a state of absolute insulin deficiency must today be regarded in terms of an imbalance of two or probably more hormones. This extremely important discovery came about as a result of work in an area of endocrinology previously believed to be unrelated to diabetes, which again emphasizes the importance of the investigative role of the endocrine system and the folly of emphasizing diabetes research at the expense of other areas of endocrinology and metabolism. The somatostatin story is just the beginning of what is becoming an ever increasing interrelationship between neuroendocrinology and carbohydrate metabolism - diabetes research as new hormones

isolated from the central nervous system with effects on blood glucose regulation are being identified and the possible role in the pathogenesis of diabetes being explored.

As a final point, I would like to add that all of the comments pertaining to the need for integration of research also apply with respect to training of investigators, teachers, and clinicians in the field of diabetes. Both the approach to the care of diabetes as well as the approach to diabetes-related research must include an appreciation of the entire field of endocrinology and metabolism. During the formative years of young clinicians and investigators, a broad educational background is crucial in order that development of diabetes research and care programs includes awareness of the important interrelationships which exist within endocrinology and metabolism.

It is my firm belief that this integrated approach toward investigation and training in contrast to a more restricted and isolated view of diabetes, will be the approach most likely to provide the important advances in our understanding of and ultimately in our ability to control diabetes.

Testimony Presented to the
National Commission on Diabetes
by: Dr. Ann Lawrence

Dr. Ann Lawrence
Assoc. Chief of Staff
Hines Veterans Administration Hospital
Hines, Illinois

Research

"MOst of us involved in research spend our lives adding a brick or two to the edifice of medical science. Every once in a while someone adds a new wing, and once every couple of hundred of years, someone comes along who makes the whole building over. Most of us are not slated to do that. But, all of us are trying, and that's what's important." - Dr. Jeremiah Stamler- Northwestern University

Our first 'wing' in the fight against diabetes came in 1921 with the discovery of insulin by Drs. Frederick Banting and Charles Best. Over the past 54 years, thousands of paths have been followed and the cure is still not in sight. The artificial pancreas and Beta-cell transplants have been discussed as having great potential. Currently, there are between 200 and 300 research projects being conducted in Chicago pertaining to diabetes and its related fields.

The American Diabetes Association maintains that research is definitely important. To that end, we have looked into dollar expenditures and find that during the calendar year 1974 approximately $791,580 was spent on diabetes research and its related fields in the Chicago metropolitan area - with $1,124,280 as projected monies budgeted for 1975.

We are all aware that research is the foundation of progress. But, it is also necessary for services to be available to the present-day patient who needs help in areas of understanding,that include medication, medical assistance, dietary counseling, psychological support and so much more.

Research is working for tomorrow, but we also must supply assistance to the estimated 400,000 area diabetics today. That includes the approximately 40,000 juvenile diabetics who are in need of help today to sustain themselves until that cure eliminates the need for the day-to-day discipline and control. The testimonies that follow will detail the broad spectrum of concern and services that the American Diabetes Association feels mandatory.

Testimony Presented to the
National Commission on Diabetes
by: Dr. Boyd Metzger
Northwestern University
Medical School

By way of introduction, I should indicate that I am an Associate Professor of Medicine and member of the Center for Endocrinology, Metabolism and Nutrition at Northwestern University Medical School. I have come here as a member of the Endocrine Society to lend support to the Diabetes Commission in formulating recommendations to Congress for broad-based research support into the causes and proper treatment of diabetes mellitus. For more than a decade, our laboratory under the direction of Dr. Norbert Freinkel has made a major commitment to the study of intermediary metabolism and diabetes in pregnancy.

That diabetes during pregnancy presents a serious hazard for fetal survival has been recognized for decades. Thus, stillbirths, toxemia, oversized babies, neonatal hypoglycemia and unexplained deaths in utero claimed up to 50% of all fetuses in insulin-treated mothers. The demonstration of the pathophysiology of some of these complications and the prediction that excellent control of maternal diabetes during gestation would result in improved fetal salvage were based on an understanding of the maturation of fetal metabolic and endocrine systems. Such insights were gained from basic and clinical research in many facets of endocrinology and diabetes. The documentation that better treatment of maternal diabetes improves fetal survival remains one of the clearest examples of the positive benefits of good metabolic control of diabetes.

As I have indicated, diabetes profoundly affects the outcome of pregnancy; however, pregnancy also exerts effects on carbohydrate metabolism. In normal pregnancy, resistance to the action of insulin increases and reduced glucose tolerance is observed despite a compensatory outpouring of insulin. As a result of the diabetogenic factors of pregnancy a "maturity onset" type of diabetes

mellitus, gestational diabetes, develops in 2.5 to 3.5% of all pregnancies. In established diabetes, insulin requirements increase substantially during gestation. The diabetogenic effects of pregnancy are most marked in the third trimester and in general parallel the growth of the developing conceptus. Over the past decade, as a result of studies in our own laboratory and those of many other investigators in a variety of disciplines, we can now define several mechanisms by which the developing conceptus and its important structure, the placenta, exert diabetogenic effects on pregnancy. As early as 1964, Dr. Freinkel and collaborators demonstrated that the placenta is a potentially important site for the degradation of insulin and perhaps other maternal peptide hormones. Recently, Dr. Rubenstein and colleagues have also confirmed that the placenta can contribute to the increased need for insulin during pregnancy by its contribution to insulin degradation and have extended the observations to study the metabolism of proinsulin and C peptide as well.

The placenta is also the site of production of other hormones which can affect:

(1) intermediary metabolism in the mother,

(2) the sensitivity of maternal tissues to the action of insulin, and

(3) the secretion of insulin from the beta cells.

Work in Dr. Daughaday's laboratory first implicated human placental lactogen (HPL), the growth hormone-like peptide of placental origin, as one of the diabetogenic principles of pregnancy. HPL is found in maternal circulation in increasing amounts in the second and third trimesters of pregnancy. In contrast to growth hormone, the release of HPL is not exquisitely responsive to metabolic feedback control. However, we and others have recently reported significant, albeit small decrements in HPL after oral or intravenous glucose loads. Work from several laboratories has delineated the potential contributions

of the increasing levels of estrogen and progesterone during late gestation to the augmented insulin resistance and insulin secretion in pregnancy.

Finally, the placenta also exerts a profound and direct influence on maternal intermediary metabolism by its utilization and transport of metabolic fuels, i.e. glucose and amino acids from the maternal circulation. As a result of the interplay of these multiple gestational factors, overnight fasting levels of glucose and amino acids are lower and free fatty acids and ketones are higher in normal, pregnant women than in nongravid subjects. The changes in intermediary metabolism and in intracellular availability of oxidizable substrate may affect glucose tolerance, tissue sensitivity to insulin and insulin secretion per se.

Recently, reports from our laboratory and others have indicated that we cannot implicate hyperglucagonemia or impared suppression of glucagon secretion among the diabetogenic factors of pregnancy.

The documentations of these several diabetogenic actions of pregnancy have also resulted from the work of many investigators with diverse interest in diabetes, endocrinology and intermediary metabolism. As a result, we can now begin to ask the question, "why does gestational diabetes emerge during pregnancy?" Do the diabetogenic factors of normal gestation unmask a genetic limitation of the beta cell to respond to demands for more insulin, or do some pregnant subjects produce the diabetogenic factors in excess leading to carbohydrate intolerance in spite of an initial normal or supernormal compensatory secretion of insulin?

Other important questions regarding the interplay of diabetes in pregnancy remain unanswered or still to be formulated. For example, despite the great improvement in perinatal mortality brought about by improved care, congenital anomalies continue to be three to five times more common among infants of

diabetic mothers than in the general population. Such congenital anomalies result from insults during the first trimester of pregnancy. We must now focus on factors other than the diabetogenicity of late gestation. Can quality of diabetic control be implicated here? Are altered maternal or fetal endocrine relationships implicated or are factors which we have not yet considered responsible for the development of congenital anomalies among diabetic mothers? The answers to questions such as these will come only through the continued integrated, multidisciplinary efforts of investigators who are determined to know more of the manifold mysteries of diabetes.

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Testimony Presented to the
National Commission on Diabetes
by: Dr. Donald Steiner

To introduce myself, I am Chairman and Professor Biochemistry and Professor of Medicine at the University of Chicago where I am the Director of the Diabetes-Endocrinology Center. I hold membership in the American Diabetes Association, Endocrine Society, Biochemical Society, American Society of Biological Chemists, National Academy of Sciences, and am a member also of the editorial boards of Diabetes and the Journal of Biological Chemistry.

I wish to strongly support the position which has been taken by the Diabetes Commission in formulating recommendations to the Congress indicating that further progress in diabetes-related research is strongly dependent on progress in fundamental research. It is by now almost a commonplace that advances in medically-oriented research develop to a very significant degree from advances at a fundamental level and, indeed, that progress in medical research cannot continue without a strong and broad base of vigorous research. Such basic research effort is going on in fields such as biochemistry, molecular biology, cell biology and basic endocrinology as well as in many others.

As emphasized by Dr. Daughaday in his testimony this morning, the Endocrine Society strongly fosters basic research in endocrinology, much of which is relevant to diabetes. Advances in basic endocrinology, in turn, are very much dependent upon fundamental research in chemistry, physics, protein structure, enzymology, cell and molecular biology and many other areas.

Many examples could be cited where progress in basic science has had a strong impact on clinical science. One such general area would be in the mechanisms

of protein synthesis and the organization of protein biosynthetic machinery of cells. Thanks to the outstanding work of many scientists, including Dr. George Palade, who received the Nobel Prize in Medicine last year, we now have a detailed understanding of the molecular events involved in the formation, packaging and ultimate secretion of a variety of products from cells. We know that such diverse cells as neurons, insulin-producing pancreatic beta cells and antibody-producing plasma cells all use similar machinery to accomplish the production of these highly specific secretory products. Several years ago, I had an opportunity to study the production of insulin, using an insulin-producing tumor removed from a patient in our University hospital. These studies led to the discovery that insulin is synthesized via a larger protein precursor form called proinsulin. My coworkers and I found that proinsulin could be cleaved by enzymes in the beta cells in the islets of Langerhans during its intracellular migration into secretion granules. Within just a few years, it began to become evident that many other peptide hormones as well as other proteins such as viruses, immunoglobulins, serum albumin and many others, are also formed by similar mechanisms involving proteolytic modification of larger precursor forms. By studying these forms, we not only have learned more about how cells make insulin and other proteins; we have also learned that proinsulin and other insulin-related peptides are secreted into the circulation and can provide useful diagnostic information. In this instance, then, research on insulin led to a broadening of our basic science. But many aspects of basic knowledge of protein synthesis and structure were necessary as a foundation for this work. The two fields have thus complemented each other leading to rapid progress.

Recently a new breakthrough has come in the study of the formation of secreted proteins with the finding at Cambridge University that antibody chains are

synthesized initially in a larger precursor form which is believed to facilitate the transfer of the peptide chain across the endoplasmic reticulum during synthesis and which enables it ultimately to be packaged in the Golgi apparatus and secreted from the cell. There is now growing evidence that similar mechanisms are involved in the formation of a large number of secreted proteins such as proparathyroid hormone, proinsulin and many others, and thus these forms have been called presecretory proteins. These differ from the prohormones which fulfill other important functions. The additional amino acid residues are cleaved away so rapidly during synthesis that these forms can only be clearly demonstrated by translating the proper messenger RNA which encodes the protein, in a cell-free system derived from ascites cells or from wheat germ. It is a fascinating consequence of the remarkable unity of biology that such diverse systems as messenger RNA molecules from animal cells and protein synthesizing systems from wheat germ (which provide certain technical advantages) can be effectively combined to solve important problems. This is yet another way in which basic research on a very broad front unexpectedly advances biomedical science.

Another area in which progress has been dependent upon advances at a basic level has been in the understanding of the mechanisms regulating secretion. The secretion of an important hormone such as insulin is controlled by a complex interplay of a large number of stimuli which are now believed to act primarily at the surface, or plasma membrane, of the beta cell. Thus, general advances in our understanding of the structure and properties of cell membranes, derived from a wide variety of tissues and also from such simple cells as red blood cells, have contributed to a much deeper understanding of secretion. Secretion from many kinds of cells seems to be triggered by small changes in intracellular calcium concentration which are brought about by a

sudden increase in the entry of calcium into the cell upon stimulation. We can thus begin to understand the effects of a number of substances which either stimulate or inhibit the secretion of insulin (or a variety of other hormones and important substances) in terms of their effect on the entry of calcium into cells or its distribution within cells. One such substance which has recently stimulated considerable interest is a small peptide called somatostatin that was originally discovered in the hypothalamus but which has now been found to occur also in special cells in the islets of Langerhans in close proximity to the cells producing insulin and glucagon. Thus, studies of the regulation of the secretion of pituitary growth hormone have unexpectedly shed light on processes related to diabetes, and somatostatin may prove to be a useful tool for basic studies of calcium permeation into a wide variety of tissues.

Returning briefly to proinsulin, this discovery has not only shed light on mechanisms of production of a wide variety of hormones and proteins in cells; it has also contributed to a greater understanding of the structure and action of insulin. The structure of proinsulin has been analyzed and it is now known to have many structural similarities to insulin. Work of Dorothy Hodgkin, a Nobel Prize winner, and her group at Oxford University, has led to the development of a complete, three-dimensional picture of the insulin molecule. Using this information, it should be possible to learn more about how insulin and proinsulin bind to tissue cells and what chemical features of their structure are necessary for biological activity. One also can use the knowledge of the structure of proinsulin to design efficient new synthetic approaches to the chemical synthesis of insulin. And it is likely that at some future time, synthetic insulin will become a necessity.

In summary, I have attempted to indicate with a numberof examples how basic research and disease-oriented or targeted research progress most rapidly when these both move ahead in balance. I have emphasized that advances in clinical research tend to be more dependent upon progress in basic research but have cited examples where directly medically-oriented research has shed light on basic processes. It is because of this synergistic interaction that we now call for renewed recognition of the importance of basic research for the future vigor and productivity of biomedical research in general. At this time in the development of science, it is critically important ot organize our science and its support so that it can remain sufficiently autonomous to guide itself in an enlightened and self-sustaining fashion while it also maintains awareness of its responsibility to important public concerns such as diabetes and its treatment. Thus in order to achieve a reasonable balance of fundamental non-targeted research as targeted programs are established, it is proposed that additional funds be set aside for non-targeted research in direct proportion to these appropriations. Approximately 20 to 30 per cent of these amounts appears to be a reasonable figure to add on for non-targeted basic research programs.

Testimony Presented to the
National Commission on Diabetes
by: Mr. Harold Rivkin

July 25, 1975

Mr. Victor Wartofsky
Information Officer
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National Institutes of Health
Building 31, Room 9A04
Bethesda, Maryland 20014

daystrol-scientific inc.
4018 West 65th Street ▪ Minneapolis, Minnesota 55435
MANUFACTURERS OF medi-jector INJECTION DEVICES
Phone (612) 920-2328

Dear Mr. Wartofsky:

This will give you a resume of what I would like to address my remarks to the Commission on August 4th in Chicago.

My remarks will encompass the area of public and professional education as well as the need for coordinated research programs that are critical to the people with diabetes in the United States.

The research efforts that have been an ongoing program, as well as the educational programs which have been splintered into different areas should in some measure be monitored and channeled so that there is some uniformity.

The inability of the major diabetes groups to coordinate their efforts in a manner that would befit the dignity of the people they represent should be changed. The development of a universal standard program in education encompasses many phases that have been overlooked for all too many years.

The critical need for tying the education program with the research program has been also overlooked for the simple reason that many people have not been working <u>together.</u> The primary purpose of most people involved in any diabetes oriented program has always been to assist in educating the people and their families who are involved with the chronic disease. One significant factor stands out and that is if proper education has not been delivered to these people and their families, they are not going to be alive long enough or healthy enough to enjoy the fruits of any researchers labors or discoveries.

These are a few of the things I would like to address myself to during my presentation to the Commission.

My sincere thanks and appreciation for assisting in this honored invitation to me and I am looking forward to the hearing on August 4th.

Respectfully,

DAYSTROL-SCIENTIFIC, INC.

Harold S. Rivkin, President

HSR:gl

Testimony Presented to the
National Commission on Diabetes
by: Ms. Lorraine Price

July 9, 1975

Mr. Victor Wartofsky
N.I.A.M.D.D.
National Institute Of Health
Bldg. 31 Room 9A04

Dear Mr. Wartofsky:

The Juvenile Diabetes Foundation of Chicago has asked me to speak before your board on August 4, 1975. At that time I will discuss the following:

1. Living with diabetes 50 years (exception to rule)
2. Near normal life
    a.. Childhood
    b.. Adolescence
    c.. Adulthood
3. Summary of progress in the diabetic world

I am enclosing a copy of the letter I received from the Joslin Diabetes Foundation, Inc. on my 50th anniversary.

Very truly yours

Lorraine M. Price

Lorraine M. Price
5001 N. Central Avenue
Chicago, Illinois 60630

lp
Encl.

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January 20, 1975

Mrs. Lorraine M. Price
5001 North Central Avenue
Chicago, Illinois 60630

Dear Mrs. Price:

I am writing to congratulate you on having received the award of the 50-Year Medal at the hands of Dr. J. Stuart Soeldner at the meeting of the Juvenile Diabetes Foundation on January 15. I am pleased that our organization could be represented by Dr. Soeldner. He was much impressed by the large attendance at the meeting and the interest and enthusiasm shown.

The medal and certificate were presented to you in recognition of your triumph over diabetes, and carry with them the best wishes of the Incorporators, Trustees and Staff of the Joslin Diabetes Foundation. It is fitting that the award could be made during the year which marks the fiftieth anniversary of the onset of symptoms of your diabetes and the initiation of insulin treatment.

You are among the first persons in the history of the world to live for 50 years with insulin-requiring diabetes. It was not until 1921 that at the University of Toronto, Drs. Frederick G. Banting and Charles H. Best discovered a method of extracting insulin from the pancreas. Insulin was first given to human diabetic patients in 1922, and it was not until 1923 that supplies were adequate for general distribution and use. I am sure that courageous, faithful and conscientious care on your part has been an essential factor in this notable achievement. I am confident also that the excellent guidance and supervision of treatment provided by the late Dr. Rollin T. Woodyatt and by Dr. Arthur R. Colwell and Dr. Donald I. Bell, have contributed immensely to your success.

I wish for you health and happiness in the years ahead.

Sincerely yours,

Alexander Marble, M.D.

AM/w

Testimony Presented to the
National Commission on Diabetes
by: Mr. John W. Nowak
Mr. Kennedy T. Hill

Champaign County Diabetes Association
P.O. Box 2634, Station A
Champaign, Illinois 61820

Summary of remarks to be made to the National Commission on Diabetes
Chicago public hearings, August 5, 1975

Speakers: Kennedy T. Hill, Treasurer, and John W. Nowak, Governing Council

Introduction:

The primary focus of the presentation by the Champaign County Diabetes Association will be aspects of diabetes as it relates to a medium-size community (metropolitan area of 100,000 people) located in a predominantly rural area, removed from a large urban area and lacking a major medical research facility. While aspects of Champaign County, Illinois will be used to illustrate points and provide concrete examples, discussion will focus on general problems and opportunities for education, detection, and treatment of diabetes representative of such locales across the country. Mr. Hill, a diabetic for 25 years since the age of 11, will comment on treatment needs and research priorities of long term diabetics. Mr. Nowak, father of a 9-year-old diabetic daughter, will comment on needs and problems with juvenile diabetics.

Detailed Summary of Remarks

I. General Discussion of the diabetes problem in such communities
   A. Description of Champaign County, Illinois
      1. Geographical location and city/rural characteristics
      2. Description of community and surrounding areas
      3. Medical facilities, staffing, and other health resources
   B. Champaign County Diabetes Association
      1. Organization size, structure, and membership
      2. Education, detection, and research support objectives
      3. Priblems, needs, and challanges for such groups
   C. Diabetic Needs in Such a Community
      1. Prevelance of diabetes
      2. Lack of patient and public knowledge
      3. Problems in health delivery systems
      4. Need for in-service professional training
      5. Lag of awareness of implications of research advances

II. Problems and Challanges of Long-term, Juvenile-Onset Diabetes
   A. Complexity of optimal long-term control
   B. Need for extensive patient knowledge continually updated
   C. Economic and social consequences of diabetes condition
   D. Frequency and seriousness of long term complications
   E. Research priorities for problems associated with long-term diabetes

Champaign County Diabetes Association

Summary of remarks to be made to the National Commission on Diabetes
Chicago public hearings, August 5, 1975

III. Particular Problems with Juvenile Diabetics
- A. Biographical information and medical history of nine-year-old diabetic girl illustrating points
- B. Personal and social consequences of disease
- C. Relationship with medical profession
- D. Special problems
  1. Lack of understanding of condition by general public
  2. Needs of schools and teachers in understanding diabetes
  3. How to help children learn to control their condition

IV. Recommendations
- A. Need for Educational Programs
  1. For general public awareness of true magnitude and seriousness of diabetes and nature of condition
  2. More information for diabetics and their families on how to optimize control and on the potential and prevelence of long-term diabetic complications
  3. Rapid dissemination of research results and treatment advances to medical and health profession personnel across the country, especially those away from leading medical centers
  4. Need for mobile training and education units and regional clearinghouses for diabetes related information, and role of local diabetes associations in co-ordinating and otherwise supporting such efforts
- B. Need for Upgrading Health Delivery Services
  1. Inservice training of health professionals
  2. Importance of early detection of both the diabetes condition per se and of long term complications, e.g. diabetic retinopathy: preventive medicine at its best.
  3. Need for greater patient education by health professionals: patient responsiblity and team care at their best.
- C. Priorities for Research Funding
  1. Intermediate-term research priorities
     a. Significant enhancements in "optimal control"
     b. Prevention and treatment of long-term complications
  II. Long-term research priorities
     a. Arresting or reversing condition itself
     b. Prevention of condition itself
  III. "Cure" for diabetes: brief comments on our hopes, our dreams, and the realities that face us.

End of Remarks

Mr. Hill and Mr. Nowak will discuss the major points of this outline in presentations of total duration of 10-15 minutes. Supplementary materials will also be available to pass out to interested participants and observers.

7/25/75

Kennedy T. Hill
AC 217, 344-5195
Urbana, Illinois

John W. Nowak
AC 217, 367-0922
Urbana, Illinois

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Testimony Presented to the
National Commission on Diabetes
by: Mr. Erwin J. Lurie

Opening Remarks of Erwin J. Lurie Prior to Prepared Testimony
Before The National Commission on Diabetes

August 4, 1975 - Chicago

Copy requested by Dr. Crofford

Thank you, Doctor Crofford.

I would like to compliment you and the Diabetes Commission for the time you have taken today for these hearings which began at approximately 9:00 a.m. this morning. It is now approximately 4:00 p.m. and you have been going strong without a stop. Even in baseball they take a seventh inning break and stretch and relax for a moment.

I would like at this time Doctor Crofford and Ladies and Gentlemen of the Commission to depart from my prepared remarks in opening, and make a few personal comments on the great amount of information we all listened to today.

There were some very fine worthwhile talks given and I did learn a great deal concerning some of the peripheral problems of diabetes. It is true that there are problems that the dieticians spoke about of food counseling and the translation of diet programs into Spanish and other languages. However the Juvenile Diabetes Foundation believes that this is purely a local and civic problem. The United States Government Printing Office publishes some marvelous material pertaining to food count, calorie count, carbohydrates, fats, etc., which can be used as a basis for translating diets into other languages which the dieticians can use. Problems of counseling were mentioned and the one to one help type counseling. The Juvenile Diabetes Foundation does this type of counseling and does peer rap sessions and mothers counseling group meeting with mothers meeting each other face to face on a one by one basis. The Juvenile Diabetes Foundation does not believe in building new buildings with brick and mortar, Centers that require administrative costs and maintenance costs. We don't believe that governmental programs should be enacted that brings the government directly into our homes.

I was most impressed of course with the fact that most all of the speakers did refer and agree to the importance of research in diabetes, research for a cure and research to cure the complications.

However in addition to this a number of other problems were mentioned and mentioned and mentioned such as employment education and druggist education and public education. There are physician education, patient education and dieticians education. There are problems in insurance and there are problems with nursing education and the education of ethnic groups and minority programs. There are inner city problems and outer city

problems and problems of detection and problems of public apathy. Teacher training problems and counseling problems, camp problems and prison education problems. All were mentioned today.

I'd like to point out to the Commission however that they must decide that these are problems that are much greater than the Diabetes Commission has to reckon with, and after all Doctor Crofford if the Commission was to handle all these problems in your final report you would have to recommend to the Department of Health, Education and Welfare that it completely reconstitute itself and reconstitute all of their programs.

I would also like to point out to the Commission that we just can't shoot arrows into the air without any targets. There is an old story book lesson that I learned when I was a young boy. Another way of putting it is we must face the realities of dollars and ask ourselves how many dollars are going to be available and how many pieces we can slice out of the same piece of pie. This is an important decision.

The Juvenile Diabetes Foundation is concentrating on the priorities of taking care of the most important things first. We recommend that the Diabetes Commission keeps this upper most in their mind. And now I'd like to refer to my prepared testimony which is quite short.

LIBRARY OF THE JUVENILE DIABETES FOUNDATION
INTERNATIONAL

STATEMENT FOR PRESENTATION BEFORE THE
NATIONAL COMMISSION ON DIABETES
August 4, 1975

By Erwin J. Lurie, National Chairman of the Board of Directors of the
Juvenile Diabetes Foundation

Dr. Crofford, Members of the Commission, and my friends of the concerned public.

I thank you for allowing me this additional opportunity to be heard at this, possibly the last open public session, of the National Commission on Diabetes.

You may recall that I appeared at your opening public session in Bethesda, this past April, when I outlined the history, purpose and the goals of the Juvenile Diabetes Foundation as they relate to our concern for your efforts in shaping the provisions of the Diabetes Act.

I said then that, as you move around the country, there will be representatives of our foundation appearing before you and making their indivudal thoughts and voices heard.

You have heard their demands for research to better the terribe inadequacies of current methods of treatment.

You have heard how diabetes has become a major public health hazard and a monumental health care and disability cost problem in our country today.

You have heard many voices demanding expanded research priorities that will most rapidly lead to a greater knowledge of the disease process and the arresting of the complications and ultimately the eradication of this dread disease.

I think I can say with your full confirmation that, you did meet us and hear our many voices. Some testimony I know, was personal and emotional -- some factual and businesslike -- and some even angry and provocative. In essence, you were exposed to a very broad range of human reactions regarding the serious and insidious problems of diabetes that affects the tens of thousands of persons from all walks of life who make up the Juvenile Diabetes Foundation.

I am sure you will agree that all through their testimony you heard the single most important link that unites all of us -- an overriding concern for expanding research to assure that significant, practical, scientific progress is made as rapidly as possible. That concern was articulated loudly and clearly as an absolute and inflexible priority.

I can also now report that in the past four months the Juvenile Diabetes Foundation has grown from 47 to 60 chartered and functioning chapters throughout the United States and Canada. I can assure you that this growth is but a beginning since there are an additional 16 chapters in the process of formation.

This great, continuing growth of the Juvenile Diabetes Foundation is the practical proof of what the people of America want. Through the Juvenile Diabetes Foundation they are expressing their fears of the complications of diabetes and are demanding improved methods of treatment and a search for a cure.

Those of you who were kind enough to attend our National conference in June, learned that we awarded $657,000 to diabetes research for the fiscal year 197-76, bringing our cumulative research support to over $1,000,000 in just two years as a National voluntary health agency. However, this funding now going to 19 medical and biological projects and 6 post doctoral fellowships still represents but a very small part of the overwhelming requests for funds received by us and found meritorious by our distinguished medical advisory board. Thus, the tremendous need for additional medical and biological research was once again made dramatically clear to us. Therefore, there is no way that we can accept the story that sufficient research funds are being allocated and that there is no pressing need for additional research monies. We have tangible evidence that there is a crying need to fund many worthy dedicated researchers who have projects with exciting potential to open up the avenues of understanding that can ultimately alleviate the complications and possibly find the cure for diabetes. We are here again to plead that your final recommendations will strongly reflect this desperate need for research.

I do not want to go on at length today. Each of you already know well what it is that our people want from this Commission's final report. The time for rhetoric is behind us and must end now. We cannot, and surely Congress will not, accept peripheral programs, platitudes and cliches in your final report. We know that your report will be put together thoughtfully and meaningfully, so that it will stand as a substantive and definitie document, indicating the earnest desires and the very real needs of our nation's diabetic community.

I strongly urge you to pay heed to our voices when drafting your report. Make these nine months of your very hard work, a signficiant, positive contribution to the health and to the economy of our country.

We have come to you in the spirit of hope, respect, and cooperation, and we are determined for the sucess of this historic Commission.

You cannot fail us. You must not fail us. We will not allow you to fail us. Thank you.

Testimony Presented to the
National Commission on Diabetes
by: Ms. Marilyn Furer

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Gerald Grodsky, M.D.
Paul E. Lacy, M.D.
Daniel Mintz, M.D.
Maria New, M.D.
Daniel Porte, Jr., M.D.
Arthur H. Rubenstein, M.D.
J. Stuart Soeldner, M.D.
Mark A. Sperling, M.D.

July 22, 1975

Mr. Victor Wartofsky
Information Officer
NIAMDD
National Institute of Health
Building 31, Room 9A04
Bethesda, Md 22014

Dear Mr. Wartofsky:

I would like to testify at the National Diabetes Commission hearings being held in Chicago on August 4.

Below is an outline of my testimony. I will be able to give you a copy of my testimony at the hearings if you so desire.

I. Background on my diabetic child, now age seven
   A. 18 months old at onset of diabetes
   B. over 50 convulsions and at least 5 paralyzing episodes due to insulin reactions
   C. Special problems of an infant who cannot yet understand, nor communicate properly, daily diabetic routine.
   D. Need for supportive measures and understanding for entire family for this age group.

II. Where primary education of diabetic, or parents of a diabetic, takes place.

III. What can be of the most help to the diabetic--research.

Thank you for your consideration in this matter.

Sincerely,
Marilyn Furer
Mrs. Marshall Furer (Marilyn)
Immediate Past President
Juvenile Diabetes Foundation,
Chicago NW

P.S. I would appreciate it if I could be scheduled to speak after 10:00 a.m.

Testimony Presented to the
National Commission on Diabetes
by: Mrs. Mary Ann Keller

MEMBERS OF THE COMMISSION

My name is Mary Ann Keller and I am presently the Acting Director of the American Diabetes Association, North Dakota affiliate. I wish to express to you, The National Diabetes Commission, the needs for diabetic education in my State, to make known some of the problems and to suggest a solution.

My active interest in diabetes education stems from work done as education coordinator for the Greater Cleveland Diabetes Association, a year and a half ago, and from my training as a registered nurse.

My desire to assist persons with diabetes in the State of North Dakota's community.

The need for diabetic education has been evident in many ways, but most recently through the evaluation of a workshop the North Dakota Affiliate held for nurses, dietitians and physicians this May, who discussed the need for education as per their own regional area.

The people in North Dakota and Western Minnesota do not represent large numbers but they face many hardships that are not encountered by those in large population centers. They live great distances from health care and each other. The winters are long and cold. Travel is often restricted due to weather conditions. Survival depends upon hard work and adequate knowledge of one's health problems - this is even more evident due to the doctor-patient ratio being only half of what the national average is. Our many Indian reservations face great health education and treatment shortages.

This Commission could assist the people in the North Dakota area by considering the proposal you have before you and which offers a solution to some of our problems.

In the information which I sent to Dr. Haddock-Suarez of your subcommittee on "Education and Treatment", mention was made of the American Diabetes Ass'n North Dakota Affiliate's intent to serve the diabetes of this state by tapping every source of possible help and this proposal is evidence that these sources are in existence.

It is vital that you recognize the fact that even though North Dakota represents a small population, spread over a large area, the percentage of diabetics in our area, due to the high prevalence in diabetes on our indian reservations, is probably much higher than many places you're familiar with, and that these persons face the same needs of diabetics in larger population centers, plus the many additional problems concerning logistics and weather.

We, in North Dakota, can and want to help ourselves, but to do this we need you to support our need.

LIBRARY OF THE UNIVERSITY OF NORTH DAKOTA

Testimony Presented to the
National Commission on Diabetes
by: Dr. Fred Hofeldt
University of North Dakota

MEMBERS OF THE COMMISSION

My name is Fred Hofeldt and my appearance before you, the National Diabetes Commission is the result of my new position as Chief of Endocrinology in the Department of Medicine at the University of North cakota.

My interest in diabetes education and research is the result of 15 years of training in the field as you can surmise from my curriculum vitae.

During the last six months, I"ve had the opportunity to learn of the needs of the diabetics of North Dakota and also to learn the intentions of the Medical School. The aim of medical education in North Dakota is to develop primary care health programs which can tackle the health needs of the people of this state. One method of accomplishing this is through the new four year Medical School which is developed on the "Area Health Education Center" concept and therefore divides the state and school into four regions with an AHEC Dean (MD) in each area.

Since diabetes is the number one health problem in North Dakota, as well as, the nation, I'm hoping you can visualize the potential this school has, and in particular my division, to assist in the education of physicians and all other health professionals involved in primary care of the diabetic and to produce meaningful research in the clinical and basic science areas. This plan could and will work, if research and training centers are placed in these already existing regions under the direction of the Department of Medicine as protrayed in the proposal before you.

The University of North Dakota School

Department of Biochemistry has proven research capability with grants totaling $285,000 for 1975. They have produced 245 full length research paper over the years. Those pertinent to diabetes are attached to ~~this~~ the School's proposal.

The University of North Dakota also utilizes the expertise of the only Human Nutrition Laboratory in the country and is funded by the United States Department of Agriculture for 1.4 millions dollars. This laboratory has a metabolic unit for patients and is presently involved in research in trace metals as per their relationship to heart disease. The Federal Government has just made the Veterans Hospital, in Fargo, a Deans Committee Hospital for the School of Medicine. This hospital is where the division of Endocrinology will be.

The University of North Dakota's Medical Center Rehabilitation Hospital is the only one of its kind from North Dakota, all the way to Seattle, Washington.

You, as members of the National Diabetes Commission, in studying Diabetis Mellitus, must remain aware of the needs of the people of rural areas such as North Dakota and should grant them your support, just as it will have the University of North Dakota Medical School's, and mine.

LIBRARY OF THE UNIVERSITY OF NORTH DAKOTA

Testimony Presented to the
National Commission on Diabetes
by: Mr. Art Raymond
Indian Studies
Univ. of North Dakota

MEMBERS OF THE COMMISSION

My name is Art Raymond and I am Director of the Office of Indian Studies at the University of North Dakota at Grand Forks. In that capacity, I work with the Indian peoples of the state from all of the reservations because of their enrollment at our University. More than that I, myself, am a Sioux born and raised in South Dakota. I am the only American Indian serving in the State Legislature, and I am a member of and speak for the North Dakota Indian Affairs Commission. In this regard, then, I should like to present to you something of the story of our people, specifically, from North Dakota.

Our people live on the reservations in North Dakota in the worst kind of poverty this country knows. Please don't take my word for it, but look at the report of the Kennedy Commission and statements made by such people as Senator George McGovern when he said that the American Indian people suffer in the worst conditions this country knows. Our conditions are worse than the Blacks, the Spanish Americans, the Chicanos and the Puerto Ricans. But yet all national attention is paid to the other minority groups because of the Civil Rights movement and the power struggles of the 1950's, and our people were left to linger in the same conditions which have prevailed for hundreds of years. And millions upon millions of dollars are expended by Congress and the Federal Government in the interests of other minorities, but, because the Bureau of Indian Affairs is supposed to be taking care of us they somehow forget about us and the money is expended to alleviate poverty and correct health problems among all other minorities except the Indian. The bulk of the money goes to others while our people continue to die in North Dakota at the age of 43; where the population at the State Penitentiary is about 28% of the total when it ought to be about 3%; where the infant mortality rate in North Dakota for our Indian mothers is double what it is for other mothers in the state; where the average age of education for our people is at the sixth grade level in North Dakota and for others it is at the eleventh grade level; where unemployment on the four reservations of North Dakota last winter ranged from a high of 92% unemployed to a low of 43% unemployed.

These conditions mean that our people have to have a lot of help in breaking the never-ending chain of poverty which brings with it all of the conditions of poor health, early death, no jobs, little education. Is it any wonder, then, that the high incidence of diabetes among our people rages on unabated?

I am no medical expert and do not pretend to be. I do know, however that for 100 years or more (since 1834) the Bureau of Indian Affairs was charged with the responsibility of providing health care for our people. It always fought the battle of trying to secure professional medical people, that is to say, doctors and nurses. Finally, in the early 1950's, by

contract with the Public Health Service, the Bureau of Indian Affairs turned over this responsibility to PHS. PHS in turn created its own Indian health service and secured their doctors from the military draft. With the end of that draft, doctors have quit coming to the reservations and our people are back in the same old death valley. We need the kind of programs the University of North Dakota, School of Medicine is proposing in order to make a start in establishing a healthy people who can recognize their own strengths and build upon those strengths to be a positive force in this country we know of as the United States of America.

LIBRARY OF THE INDIAN CHRISTIAN COMMISSION

Testimony Presented to the
National Commission on Diabetes
by: Dr. James D. Brousseau

MEMBERS OF THE COMMISSION

My name is Jim Brosseau and my present position is a resident in Internal Medicine at the Marshfield Clinic in Wisconsin. I was born and raised in North Dakota and plan to live there as soon as my training program is over.

I wish to speak to you of the need for education among the Plain Indians. My qualifications to speak to you result from being a physician on several Indian Reservations in North Dakota through the Indian Public Health Services.

Before 1940 Diabetes Mellitus was thought to be rare among American Indians. Since then, however, it has been increasing at an epidemic rate. Today many Indian Tribes have diabetes rates which are several times the rate in non-Indians. Amoung the Pima Indians in the Southwest, for example, nearly 50% of Indians over the age of 30 are diabetic. In the Aberdeen area of the Indian Health Service, which includes North Dakota, diabetes accounts for more clinic visits than any medical condition except the common cold.

Last year through the University of North Dakota Medical School we surveyed all 5000 medical records of one Indian Reservation in North Dakota and found an overall prevalence rate of diabetes of 13.8% of all people over 30 years of age. We did no case finding in this survey and believe the true rates for diabetes is twice this number.

Diabetes causes great problems among the Indian people. At the reservation where we did our survey cardial-vascular disease was three times as common among

diabetics as it was among non-diabetics. There was much renal and eye disease among these people as there is among all diabetics. We have already established diabetes is a great problem among Indians and through the University of North Dakota have already begun to study the problem in detail. We have already made a preliminary attempt to help provide a Diabetes Education Program for the Indians of our state and I feel the proposal by the University of North Dakota Medical School would be the best method to continue this education. The Indian Health Service and the tribal people want and need your help. The University of North Dakota is committed to being actively involved in improving health care and increasing health manpower for the Indian people.

I would like to enlist the help of you, The National Diabetes Commission to do something about Diabetes Millitus among the Plain Indian. If this is done you will have attacked one of the major health problems of Indians today.

LIBRARY OF THE INDIANA GUARDIAN
LIBRARY OF THE U.S. CONGRESS

Testimony Presented to the
National Commission on Diabetes
by: Dr. Gary Dunn
University of North Dakota
School of Medicine

MEMBERS OF THE COMMISSION

My name is Gary Dunn. I represent the University of North Dakota School of Medicine where I serve in the capacity of Associate Dean for Community Affairs and Associate Professor, Department of Family Medicine.

My purpose in being here today is to describe to you the organizational structure we employ in the training of health manpower at the undergraduate and graduate level with particular emphasis on the training of primary care physicians, and how this concept can be used to train health manpower in the field of diabetes.

In 1973 the state legislature authorized the existing two year school to expand to degree granting status within existing physical resources. Just prior to this authorization we had been awarded 2.6 million dollars to establish four regional AHEC's established along CHP B regional boundries. These regions include the entire state of North Dakota (70,000 sq. miles) and twenty-two counties in North Western Minnesota (12,000 sq. miles). These boundries encompass just under one million people.

Each of these regions is administered by an assistant dean who is a medical doctor and his staff. His major responsibility is to negotiate clinical training opportunities with hospitals, clinics and groups and individual practices within his region and provide overall supervision and administrative direction for the various experiences. Each region has an advisory board composed of up to thirty-five members which include a rich mis of physicians and lay persons. The diverse composition of these committees provides the school with an effective communications network, enabling it to mobilize the total resources of the greater community.

The diabetes program we are proposing will rely heavily on this existing mechanism in its implementation. The presence of the AHEC structure will enable the program to proceed with considerable haste. It will further provide a breadth of exposure to professional and lay persons basic to its success.

I would be pleased to provide more detail to the committee if that is your wish.

NORTHERN ILLINOIS UNIVERSITY
LIBRARY DeKalb, Illinois

FOR PRESENTATION BY DONALD MOBERG, CHICAGO, AUGUST 4, 1975

Testimony Presented to the
National Commission on Diabetes
by: Mr. Donald Moberg

MR. CHAIRMAN AND LADIES AND GENTLEMEN OF THE NATIONAL COMMISSION ON DIABETES:

Almost four months ago, after being charged to establish the scope and impact of diabetes in the United States, this Commission held the first of a series of public hearings in Bethesda, Maryland.

As you well know, your subsequent travels have carried you the breadth of this country, exposed you to the thinking of hundreds of professional and lay individuals from every walk of life and presented you with a massive amount of data, fact and opinion on which to base your monumentally important report to the Congress of these United States just four months from now. I do not envy you the task.

it would seem appropriate that the last of these scheduled public hearings be held in Chicago as a recognized focal point of America.

It would seem equally appropriate that these public hearings conclude with an official position of the American Diabetes Association as the historical voice of diabetics and their families in this country.

Over the weeks you have heard the formal statements of many members of the American Diabetes Association, some of them scientists, some of them diabetics, some of them parents, some of them otherwise involved individuals. While it is understandably personally important that I am the father of a diabetic child, I am here today only to present this statement by the American Diabetes Association. I am Vice-President of the Central Council of the ADA, a governing body of the Association representing the objectives of its more than 100,000 members and thousands of volunteers, professional and lay individuals, in dozens of affiliate, chapter and unit organizations throughout this country.

To begin, the American Diabetes Association applauds and commends the work of the National Commission on Diabetes. The recommendations you will make are of utmost importance to the 10,000,000 Americans who today are directly affected by diabetes, to their families, and to the growing number of concerned citizens who will ultimately be affected, directly or indirectly as diabetes increasingly becomes the nation's number one health problem. The hopes and the dreams of millions are in your hands. The American Diabetes Association stands ready to assist you in the way it best can.

The Association has as one of its most basic goals the raising of public funds to support scientific inquiry, and research will be an ever-increasing objective in time ahead.

We recognize divided opinion within our ranks, not as a divisive factor, but as a healthy state which expresses profound involvement in ultimately achieving what we all want: a cure.

But the Association fundamentally believes:

1. Control, then conquer, is the most reasonable short-range scientific objective.

2. That suggestions advanced of a cure in the short-range by a commendably positive-minded press or by research scientists to an understandably anxious public do not meet traditional standards of responsibility.

3. That as truly incredible a discovery as insulin was more than fifty years ago, as significant as it was in providing life to diabetics, the resulting revelation of the ultimate complications of this disease have intensified the diabetes health problem in this country. Thus research no longer has the comparative privilege of concentrating only on a cure; it must deal with the moment and address itself equally to the control and treatment of these complications as well as the psychologically-oriented problems produced.

4. The Association fundamentally believes that these complications have in many ways moved the research world much closer to an identification of the

nature of the disease. To put it another way: to the point where scientists now more clearly identify the basic questions to be asked, the avenues of exploration down which to move to find fundamental answers.

5. To that end the ADA at its Annual Meetings this June presented the first two of its Established Investigatorship Awards to Dr. Franz Matschinsky of St. Louis and to Dr. Arthur Rubenstein of Chicago. These Investigatorships will provide financial support for established scientists whose work is relevant to the general area of diabetes research. They will foster maximal research productivity by providing the means over a five-year period so that these individuals may concentrate exclusively on research projects.

6. The Association will continue with increasing diligence to raise public funds for research into the control of complications as well as the potential cure of the primary disease. But it believes the funds really needed for this research are so essentially massive that they must ultimately come from the Federal Government through the National Institutes of Health.

While research goes on, the present has to be faced in terms of three other areas:

First, professional education.

There are a great many brilliant men of medicine thoroughly involved in the study, care and treatment of diabetes and its complications. But since the discovery of insulin, generally speaking diabetes has not been a prime professional consideration.

Each year, the ADA and its affiliated organizations receive a million or more inquiries from diabetics, their families, their friends, asking the most basic of questions. Questions like: "What does brittle diabetes mean? Is a blood sugar count of 117 dangerous? Will I go blind? Should I be on some medication? Will I be impotent?"

Too many of these letters, unfortunately, suggest perhaps a less-than-totally-well-informed medical professional generally.

To this end, the American Diabetes Association and its Affiliates sponsor a series of ongoing progessional education programs such as the Research Symposium to be held in Indianapolis in October, the first Combined Health Care Professionals Course to be held in Seattle also in October, the Annual Post-Graduate Course in Boston come January, etc.

But as has been related before, these efforts are relatively minor in terms of the broad scale professional education efforts the federal government could support....underwriting medical school scholarships, post-graduate fellowships, ongoing programs for students, doctors, nurses, dietitians, nutritionists, pharmacists...all the individuals the American Diabetes Association recognizes as vital members of the diabetic health-care team.

Secondly, programs of patient education are a vital ingredient in the Association's overall approach to diabetes. Because as Mrs. Sydelle Feinman of Dallas suggested to you in Atlanta, if knowledge is gold, too often the diabetic and his family are paupers. The ADA patient education programs are designed to inform and teach the diabetic about his disease, its management and control... In the belief that the diabetic who understands the nature of the disease and can accept its place in his life becomes a more effective partner with his physician in the ongoing management of this chronic ailment.

Patient education is a constantly expanding activity of the Affiliates, Chapters, Brnaches and Units of the Association with local seminars regularly conducted across the country on diet control, research advances, employment potential and the like, and questions being professionally answered daily. Additionally, Diabetes FORECAST, the bi-monthly magazine of the Association, now has a circulation of more than 100,000 and essentially focuses on

patient education through articles ranging from medication to weight control, to menu-planning, to important new literature, to progress in research. With rare exception, the large metropolitan areas with medical schools and modern medical centers provide facilities that allow for extensive patient education. But the Association believes better patient education must be made available to those who live too distant from these cities, and even within these metropolitan markets--Chicago for example--ways must be found to make this education available to diabetics from lower economic levels as well as those whose ethnic backgrounds may create language barriers in communication. The materials for educating diabetics are too predominantly geared to a white middle-class audience.

Methods of patient education, the Association believes, should be a vital part of the proposals this Commission will make to Congress.

Finally, the American Diabetes Association is a voluntary health agency. It depends primarily on the work of concerned volunteers throughout the country. It recognizes the fundamental need for a huge new level of public awareness of diabetes, in an information program to be conducted by its growing volunteer army, not just among diabetics and their families, but among all peoples. It alms to create that awareness in all of its ramifications. It supports the efforts of all organizations with the same objective. Next month, the American Diabetes Association begins its first national campaign, a concentrated, unified, year-long effort in the dissemination of public information, detection and fund-raising. At both the national and local level this will be supported by a major effort in print and broadcast media.

Roger Staubach of the Dallas Cowboys is the National Campaign Chairman for the American Diabetes Association. His father and grandfather both died of the

complications of the disease, in Roger's words "because they didn't take their insulin or follow their prescribed routine."

Reader's Digest in its November issue will run a feature story on diabetes, its complications and treatment. That will go into 19,000,000 homes and reach 44,000,000 readers throughout the United States.

Diabetes FORECAST...the "consumer" magazine of the American Diabetes Association... grows rapidly in its circulation and its importance to diabetics in its bi-monthly issues.

In many other similar activities, the American Diabetes Association is hard at work developing a new level of public awareness and frankness with the public about a disease that for too long has perhaps been obscured. And all by way of "preparing" the general public as to the facts so they will give generously during its fund-raising endeavors.

But it recognizes the massive kinds of funds essentially needed can only really be generated at the federal level and that leads to your December report to Congress.

Public Law 93-354 decreed diabetes a major national health issue. It established this Commission and charged it with a huge responsibility in determining how to most appropriately meet the problem.

The American Diabetes Association recognizes the dedication of the members of this Commission and believes that its recommendations will be made with great care and consideration of all aspects of the problem...Such as, Professional Education Centers designed to train physicians, nurses, dietitians and paramedical professionals to accept an increasing responsibility in the education and maintenance of diabetics...Out-patient and in-patient programs of education and regulation for diabetics and counseling services for the entire family--addressed to the poor

as well as the better off, to the Indian, the Spanish-speaking, the black, the white...Research within each of the specialties of the National Institutes of Health--massive research aimed at both more effective control--definition of cause--and ultimate cure.

The American Diabetes Association will respect your recommendations...recommendations which are, of course, just a beginning, but an important beginning--a beginning which millions of Americans anxiously anticipate with hope for all their tomorrows.

Testimony Presented to the
National Commission on Diabetes
by: Mr. T. Harrison Bryant

Summary of Testimony for T. Harrison Bryant (Executive Director ADAM)

1. The importance of public information relative to its fight against Diabetes.

   A. Effects on general public -- public relations

   B. Effects of educational efforts

   C. Effects on fund raising

2. Lack of nationally developed materials and tools -- duplication of efforts through affiliates--lack of public relations-public information material--national awareness techniques needed to be developed.

3. Need for educational materials to be developed on nation-wide basis.

   - Television programs
   - Radio opportunities
   - Major publications
   - Duplicating of efforts and economizing factors

4. Stage of development of such materials in Minnesota

   - education
   - detection
   - public information: T.V. program

5. Recommendations

6. Introduction of other Minnesota participants representing a broad cross section of involvement with Diabetes.

   1. Diabetic and insurance problems

   2. Parent of diabetic information and public information gaps

   3. Researcher and extensive research with evidence for continuing need for broad range of programming.

   4. Physician and treatment needs.

Testimony Presented to the
National Commission on Diabetes
by: Ms. Catherine Feste
Twin Cities Diabetes Assoc.

Summary of Testimony for Catherine Feste (a diabetic)

DIABETIC PATIENT INSURANCE

Blue Cross Blue Shield of Minnesota does not insure diabetics who take daily medication. Hospitalization record, absence of complications, and physician's statement on patient's control, management, and education regarding diabetes have no influence on the patient getting insurance.

There is no insurance that a physician selected by a diabetic is competent to treat diabetes.

A. I have a personal example where a diagnosis of neuropathy was incorrectly made. It was based not on an examination but rather on an assumption.

Education, so vital to the diabetic's day-to-day management, is often lacking in the patient's care.

In Minnesota more and more hospitals are instituting patient education. However, the clinics and HMO's are not keeping up with this trend. Since a vast majority of the diabetic population is adult-onset and, therefore, may not require hospitalization upon diagnosis, there are serious implications about the clinic or HMO not providing this patient with education and instruction.

Can there be a requirement that physicians must continually update themselves if they are treating diabetics?

Could the A.D.A. come up with some standards for professional competence and maintain a list of the physicians who meet these standards? Their names, then, could be kept by the various affiliates and used as recommendations to diabetics seeking physicians who are diabetes specialists.

Catherine Feste,
Education Director, Central Chapter
American Diabetes Association, Minnesota Affiliate

Testimony Presented to the
National Commission on Diabetes
by: Mrs. Raleigh Kuller

Summary of Testimony for Raleigh Kuller (Parent of diabetic)

1. History of diabetic child and related instances pointing out specific educational needs.

   A. For the patient

   B. For the physician

   C. For the attending nurses

2. History of diabetic child in school relative to the need for education within the school staff regarding Diabetes.

3. Information relative to the need for educational and public information on a general basis. Comments relative to camping program.

4. Its role in the educational process.

5. Education and support groups such as P.T.A., Girl Scouts, Community programs.

6. The emotional and psychological effects of Diabetes on the individual and the family. Lack of studies and statistics.

7. Comments relative to progress in area of education with recommendations towards funding and implimentation for patient, parent, and public education.

Testimony Presented to the
National Commission on Diabetes
by: Michael W. Steffes, M.D.
University of Minnesota

The research effort in diabetes at the University of Minnesota Hospital and the affiliated hospitals has encompassed for a considerable period of time both basic science and clinical research. Ideas for research have been based upon new discoveries and new ideas from research in diabetes as well as the clinical situation as viewed by the practicing physician. In many instances, physicians and scientists have gathered together for collaborative efforts in projects spanning both areas of interest.

As is the case with research, the educational process in diabetes for both students and faculty has been pursued from both basic and clinical points of view. This is best exemplified in the diabetes section of the second year course in Endocrinology for the medical student. Basic science and clinical people interact daily while teaching this course to the medical students. More than half the lectures are basic in nature, covering areas such as carbohydrate, lipid and protein metabolism, and how these metabolic processes are altered during diabetes mellitus. Following these basic lectures are clinical lectures in which the student learns some of the basic principles of clinical medicine as applied to diabetes. Another basic educational function which certainly all clinicians undertake is that of educating the patient and family with regard to diabetes. This is done by each physician in the diabetic clinics and also by such local agencies as the Twin Cities Diabetes Association where many of the physicians participate in the education process.

If we add to this research and education base at the University of Minnesota, the active participation of lay people in raising money for diabetes research, we have a rather broadly based emphasis on research in diabetes as it applies to both the basic and clinical setting. The efforts of researchers in diabetes are enriched and enhanced by the participation of several physicians with lay people on the Board of Directors of the American Diabetes Association, Minnesota Affiliate. This interaction also serves to enhance the other important aspects of managing diabetes - e.g.; education of the patient and in the case of as child, his parents.

Specific highlights of the research effort at the University of Minnesota are listed below. Part of the most basic work in diabetes at our institution concerns the study of enzymatic processes regulating glycogen synthesis and breakdown. Drs. Frank Nuttall and Jonathan Bishop have been actively studying the interaction of the several enzymes involved in glycogen metabolism. Dr. Nelson Goldberg for several years has studied cyclic nucleotides and their control of cellular functions. Additionally there has been massive, continuing effort for decades under the late Dr. Lazarow's direction in the Department of Anatomy pursuing the basic aspects of islet function as well as pathological and functional complications of diabetes mellitus. Many investigators, technicians and graduate students have participated in the Department of Anatomy's effort over the past decade. Of more intermediate areas of interest have been those research projects which have attempted to take clinical observations and place them in the laboratory where some of these observations can be tested by experiments with animals. Specifically these experiments have been carried out in the areas of the secondary renal complications of diabetes (by members

(Continued)

of several departments) and the immunologic aspects in diabetes (by members of the Department of Medicine.)

Finally there has been an extended effort in the last several decades and most specifically in the last few years to treat the diabetic patient with endstage renal disease. This has been particularly evident in the Department of Medicine where Dr. Goetz and his colleagues have been involved in clinical diabetes for several years. More recently, he has worked with Dr. Najarian and colleagues on renal transplantation in diabetics, a procedure that has been emphasized at the University of Minnesota. They have demonstrated that kidneys transplanted to diabetic patients function nearly as well as kidneys transplanted to normal people.

With such a broadly based effort in both basic and clinical areas of diabetes research, the substantial local funding from private sources has been most instrumental in initiating and maintaining many research projects. The established investigators have provided both facilities and an atmosphere of curiousity with regard to the problems of diabetes and have enabled young investigators to begin investigating their own ideas relating to diabetes. It should be emphasized that progress in research has been enhanced by the local funding for specific projects.

In conclusion, the concerted involvement of all of us in research at the University of Minnesota has been based upon three areas of interest: first the interest in research itself and the kinds of questions that can be asked and the types of problems that can be solved. Secondly, we are all faculty members with a fundamental interest in teaching, and we all participate together in the teaching of endocrinology and more specifically diabetes to medical students at several different stages in their educational process. Thirdly, we are members of the community in terms of providing expertise and medical help to the diabetic and his family and many have also been involved in attempting to provide the patient and his family with the latest understanding of the process of diabetes and how the patients themselves by appropriate management may be able to provide themselves with the best possible medical care relating to the management of diabetes.

LIBRARY OF THE UNIVERSITY OF MINNESOTA

Testimony Presented to the
National Commission on Diabetes
by: Dr. C. John Baumgartner
American Diabetes Association
Minnesota Affiliate

Mr. Chairman, Ladies and Gentlemen of the Commission and guests.

My testimony today is based on my experience as one member of a four man subspecialty clinic dealing in diabetes mellitus. I also come to you as president of the Twin Cities Diabetes Association of Minneapolis and St. Paul; as president of the American Diabetes Association, Minnesota Affiliate; as medical director of the Diabetes Detection program for the State of Minnesota; and as past chairman of the American Diabetes Association Committee on Public Information and Detection. It is in my capacity as spokesman for the State of Minnesota that I speak to you today.

I should like to review the basic problems which are inherent in our state program and to make recommendations to the Commission based on our observations.

I. Diabetes Detection and Screening Programs

The TCDA and more recently ADAM have carried on aggressive diabetes detection programs throughout the State of Minnesota where 100,000 citizens have been screened within the past five years. Of this number, 3.7 percent are positive by our screening techniques. A positive screening test is any fasting blood sugar in excess of 130 milligrams percent. However, the incidence of positive screenings rise significantly in the senior citizens groups and positive screens of 7 to 8 percent occur in our citizens who are in excess of 65 years of age.

An even more impressive screening result is obtained from the testing that has been done in our Northern Minnesota Indian reservations. In this environment, 12 to 15 percent of the screenings are positive for diabetes. This correlates with the results obtained by the group from the University of North Dakota.

In view of the higher incidence of diabetes mellitus which is present in the senior citizens group and in the minority groups which would include both Indians and the black ghettos; I would recommend to the Commission that special detection facilities and capabilities be available to

a. Senior Citizens

b. Minority groups

at a minimal or no cost fee.

II. Education

I can think of no disease in which a reasonable degree of intelligence and self-discipline is so required for optimum control as it is for the disease diabetes mellitus. For the diabetic patient is in fact responsible for his own care and must be prepared to make

daily adjustments not only in his medications and diet, but also obtain a special insight in skills in coping with various times of stress and problems such as illness.

Someone must educate these people in at least a basic concept of diet. These patients must understand the physiology of insulin and why is it important for them to adjust and regulate their insulin injections. They must be able to comprehend their urine testing program and to understand not only what it means but to be aware of the various drugs and chemicals including antibiotics, vitamins and even aspirin which may alter or lead to false results in their tests.

Who must educate the patient? Many doctors appear either too busy or at least uninterested in this problem. The hospital staffs including nurses and dietitians are eager, however, a recent survey of the metropolitan Minneapolis-St. Paul hospitals revealed some rather surprising and disappointing statistics. Of the 29 institutions in the metropolitan area which were surveyed, 3 of these did not have any educational activities for patients with diabetes mellitus. This has subsequently been corrected, however, a recent statewide survey for the entire State of Minnesota in which over 250 hospitals were reviewed, the same deficiencies were noted and almost 25 percent had no significant degree of educational programs for their diabetics.

The paramedical staffs and dietary staffs of these hospitals are frustrated by lack of interest and/or funds from the administration to accomplish their goals. Our own state organization, ADAM, is frustrated by the apparent lack of funds available to support the educational center programs which have been instituted for these outstate staffs.

We, therefore, recommend that financial support for nursing and dietary personnel who desire continuing education be included in the Commissions recommendations to Congress and/or that some formal educational activity be incorporated into the Commissions recommendations to Congress.

All the visual aids and educational materials have generally been produced and developed by the various areas of the United States. Many of these are excellent materials and could be incorporated on a nationwide basis, however, until recently there has been a lack of a central direction.

What this country needs and my recommendation to the Commission is that a central clearing house be designated as a formal agency to develop and to disseminate multi-lingual aids which can be utilized throughout the country for the purposes of educating not only patients but also dietitians and nurses and physicians in the area of diabetes mellitus.

Education T.V.: The American Diabetes Association of Minnesota has sponsored an annual television series of 26 programs dedicated to educating the diabetic in his own self care and management. In 1975, these programs were distributed by 8 television stations within our State and it is our intention to include both North and South Dakota and portions of Wisconsin in our program. While we realize that these

television programs of one half hour each are not as ideal as a one to one, person to person basis for education, they have achieved significantly our goals of attaining the cheapest means of mass education and communication for the diabetic population in our State. It has the obvious advantage of reaching shutins and even those individuals whose social and educational background would make them reluctant to seek more formal educational channels.

We have been fortunate in utilizing the services of Dr. Max Ellenberg and Dr. George Cahill as well as the staffs of the Mayo Clinic and the University of Minnesota Medical Center, however, it is my personal feeling that a significant degree of talent exists throughout our country and I would invite the Commission to investigate the concept of a national education television program for the means of diabetes education.

I might also comment that there has been at least one significant benefit which was not programmed in our television series and that is that a number of diabetics have been far more knowledgeable and better educated in their diabetes than their physicians. This has created a problem and some embarrassment to the physicians who are not more aggressive in seeking coutinuing education in the area of diabetes mellitus.

Physician Education.

The area of physician education is an extremely delicate one. As has been the case throughout the country, our educational programs which include many symposiums in Minneapolis through the courtesy and help of the University of Minnesota Medical School and the Minneapolis Veterans Administration Hospital, in Duluth, Minnesota through the offices of the Duluth Clinic and the University of Minnesota Medical Center in Duluth and in Rochester, Minnesota through the cooperation of the Mayo Clinic and the Mayo Medical School. Unfortunately the physicians that attend these are not the physicians that are in greatest need for continued education in diabetes.

Though I would shudder to consider the concept and it's ultimate ramifications, I would consider that in the future it may be possible for us to consider such as a national examination to assess the relative knowledge of physicians and to allow them to qualify for special status as a diabetic physician.

III. Psychological counseling.

The national statistics which were presented to me by Dr. Marvin Ack of the Children's Hospital of the Twin Cities has indicated a divorce rate approaching 80 percent and a continuing emotional crisis in all families of chronic illnesses such as diabetes mellitus. Any physician who has cared for a diabetic child has recognized the emotional trauma which will develop in the patient in the families of those so afflicted.

It is my recommendation to the Commission that they incorporate some form of psychological and family counseling concept into their recommendations to Congress. This would include a very broad base support for diabetic camps for children.

IV. The Concept of Diabetes Centers

I am deeply concerned about the concept of diabetes centers in general, because of the danger and threat of political and provincial misuse. Certainly, if I had a diabetes center in Minneapolis, I would be very pleased and so would my patients. However, if it would be in St. Louis and Chicago, my happiness would be somewhat less.

The Commission needs to make recommendations to the Congress which would include safeguards that the activities and support of these facilities are truly available to all involved individuals within the region with which the center is to serve.

Personal comment. Finally, my personal comment is that the concept of diabetes centers might be inappropriate. Perhaps a better concept would be to establish one national diabetes center which would be responsible for research and for the educational activities of the country. I would then foresee smaller administrative satellites scattered throughout the country with the capability of disseminating educational information to the various communities within our country. Certainly, the structure and framework of the affilitates of the American Diabetes Association has already been well established and would facilitate the distribution and dissemination of this information.

Though, I would consider that the National Diabetes Center would have an aggressive and ongoing research capability, there should be the capability to allocate funds to research centers in any major institution in the country where it is apparent that important basic research is being carried on in areas which are specifically related to diabetes mellitus.

I want to thank you for the opportunity to speaking to this group today.

C. J. Baumgartner, M.D.

Testimony Presented to the
National Commission on Diabetes
by: Dr. Dorothy Kahkonen
Henry Ford Hospital

Statement
for
National Commission on Diabetes
McCormick Inn
Chicago, Illinois
August 4, 1975

My present clinical responsibilities are in the Division of Metabolic Diseases at Henry Ford Hospital. Approximately fifty per cent of my clinical practice is devoted to the care of diabetics. A significant portion of my teaching effort involves instructing young physicians how to treat diabetes and I am also personally involved in the patient education program. It is, therefore, primarily as a clinician and a teacher that I come before you today. In addition, I am a member of the Board of Directors, American Diabetes Association - Michigan Affiliate.

Introduction:

The problems related to diabetes mellitus which remain unsolved are many. They encompass all aspects of the disease beginning with detection and education of the new diabetic, continuing through many years of treatment with it's attendant problems and finally ending with the complications which cause significant morbidity and mortality for the diabetic. These areas are all deserving of attention but in my view the two areas most in need of concentrated effort are education and research.

Education:

In this context I am referring primarily to the education of the diabetic patient and his family, and I elected to discuss it first because it relates to knowledge and methods currently available. It is important to teach the diabetic to take the best possible care of him or her self using our present therapeutic modalities. This requires the diabetic to become knowledgeable about diet and medication and to become familiar with special problems such as foot care and what to do on "sick days". Education programs for the diabetic may necessarily require education at a professional level since nurses and dietitians who assist in the education of the patient may initially require specific instruction. Physicians involved in treating diabetes mellitus also must be aware of the problems inherent in the disease. The education of medical and paramedical personnel might be achieved at a regional level with instruction of individual diabetics accomplished in smaller groups or on a one-to-one basis at a more local level.

Research:

The need for improved methods of treatment is obvious to those of us involved in the care of the diabetic. This directs our attention then to research as a means of achieving the end. If treatment can be improved so that the diabetic more closely approximates the normal metabolic state, our problems with the vascular complications may be alleviated. Achievement of these goals will be through research not only as it relates to improving methods of treatment currently available, but also as it relates to etiology which may ultimately lead to new therapeutic approaches. Continued fundamental research is necessary to

identify the specific metabolic defects which lead to manifest diabetes mellitus. Once these are identified, specific therapeutic approaches are more likely, therefore achieving a "cure" rather than "control" of the disease. In this manner information gained through basic research might be applied to treatment of patients with diabetes mellitus and not be only of so-called academic interest.

These two areas, education and research, seem worthy of emphasis because of their direct relationship to the diabetic patient and his quality of life.

Respectfully submitted,

Dorothy M. Kahkonen M.D.

DOROTHY M. KAHKONEN, M.D.

DMK:rl

LIBRARY OF THE JUVENILE DIABETES FOUNDATION
INTERNATIONAL

Testimony Presented to the
National Commission on Diabetes
by: Dr. John Bryan

METABOLIC CLINIC, P.C.
JOHN B. BRYAN, M.D.
HECTOR J. INCHAUSTEGUI, M.D.

INTERNAL MEDICINE · METABOLIC DISEASES

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August 4, 1975

Report to The National Commission on Diabetes
From: John B. Bryan, M.D., Chrmn., Research Committee,
American Diabetes Association, Michigan Affiliate

Primarily, I am a clinical practitioner, serving persons with Diabetes Mellitus for almost 25 years. Their ages at the time of findings establising Diabetes have been from 1 to 96. From this experience, my bias and clinical impression compels me to speak in favor of more clinical research in several areas, which I shall list later, which I believe are not now funded.

First, I join others seeking the scientific approach to changing a plan of therapy who abhor reliance upon "intuition" and/or "clinical judgement". But, as I am currently carefully studying the data I have collected, as I have advised literally hundreds of persons with Diabetes Mellitus for over 20 years, I cannot give "hard facts" and offer preliminary thoughts: It seems essentially impossible for a human, with DM, to "normalize" his blood sugar and prevent glycosuria at all times, no matter how carefully he may restrict his diet and/or adjust currently-available insulins, given by present technics. Further, even near-perfect "control" of DM has NOT prevented the onset of small-vessel microangiopathy in those patients who are "juvenile", insulin-dependent, even by maintaining "ideal" body weight and vigorous activities. In several on oral blood-sugar-lowering agents for up to 20 years, there has been no difference in the appearance time of microangiopathy from their age- & sex-Matched insulin-taking counterpart. There is one rather clear correlation appearing as patients dying of nephropathy, with concurrent retinopathy, are compared with those outliving them, and relatively free of vascualr disease for 20-40 yrs. - this not being a first observation - smoking has a statistically-significant relationship to vasculopathy.

I am very excited over the appearance of Somatostatin on the clinical scene and hope human use can be continued to see whether it's modulating actions on growth hormone and glucagon can aid in "normalizing" blood sugar, particularly post-cibal hyperglycemia. In addition to smoking, I wish to cite an observation of another factor, other than "normalization" of sugar handling which clinically has a very positive affect on retinal vasculopathy. For the last decade we havecarefully watched the retinae of pregnant women with diabetes. This has included those requiring insulin, some on oral agents and

a rather large number classified as having "gestational diabetes". Amongst those showing no retinopathy by ophthalmoscopy during the first 2 trimesters, there have been nine women, who developed ealy "background retinopathy" in their last trimester. Flourescein-dye studies at that time showed increased "leakage", comparable to the classic picture in recognized "diabetic retinopathy". The important follow-up finding was the complete disappearance of the ophthalmoscopic and dye-study evidence of these changes within a week after delivery. One woman, with "gestational diabetes" has reproduced this sequence of events on delivery of two children, and not later, to date developed manifest Diabetes Mellitus or more sighs of the retinal changes, tho followed carefully and regularly by our retina consultant. Our theory as to the reason for the findings is that the "anterior-pituitary-like" polypeptide, elaborated by the placenta in direct proportion to it's size and age, may have the deleterious effect on the retinal vessels, as suggested in the past as an action of growth hormone, and gave the rationale for hypophyseal ablative procedures for diabetic retinopathy. We speculate whether Somatostatin could modulate this action, and even if it might prevent the macrosomia of the fetus of many women with Diabetes Mellitus.

Amongst the chemical derangements observed to be associated with an increased risk of CHD, has been hyperuricemia, found true in the data of the Framingham, Tecumseh and Peoples Gas Co. of Chicago. For the last decade we have included a periodic assay of the blood uric acid levels in all persons we follow with DM. We have been surprised to find it significantly elevated in 20%. There was association with hypertension and/or use of drugs, such as thiazides and other diuretics known to raise the level, in about one half of all the patients. This represents twice the number found on screening all patients, including non-diabetics. 8% of our diabetic patients also have had acute gouty arthritis, and 3% have passed urate stones in their urine. There is a regular relationship of hyperuricemia and acute gout with the finding of acute, as well as chronic tendonitis and pericapsulitis of many joints. There may or may not be migratory inflammation, followed by scarring, limitation of motion and even contractures, such as Dupytren's changes in palmar fascia. These tissues are later found to have calcific deposits, on Xraying the joints, such as shoulders and subastragular origin of plantar flexor muscles - all constituting the classic picture of "pseudogout", attacks of which numerically outnumber acute gouty bouts. There is further a direct clinical correlation of these findings with accelerated and extensive large-artery disease, including cerebral, carotid, coronary, aoroiliac and distal arteries of the lower extremities - and the various ischemic syndromes which follow, constituting "vascular accidents", often leading to the early demise of the person with DM. My theory as to the reason for the excess urate load to the renal tubules of the diabetic is based on the presence of the chronic catabolic state present in DM, due to the lack of adequate insulin and excessive glucagon. I wonder about the possibility of excessive xanthine oxidase, or other enzyme controlling urate

formation. I would hope that the experts in urate metabolism could aid the diabetologist. Finally, I would anticipate one suggestion and report that there is no correlation between gout, hyperuricemia and/or tendonitis and the use of alcoholic beverages, as has been suggested in the literature.

Areas in which further research would seem fruitless, particularly in light of developing facts to now, include: Hypophyseal destruction for any of the diabetic complications; continued beratement of the patients with diabets about vigorous dietary limitations, additional sulfonylureas or other oral agents(unless an agent would "unlock the insulin", or block the release of glucagon from the pancreas, or alter the anti-insulin effedts of multiple "hormones" or polypeptides, from many sites in the body, on this "multihormonal disease"- Diabetes Mellitus.)

I would strongly support better correlation of the patients' needs, who are approaching the "End-stage renal failure" of diabetic nephropathy with the nation-wide kidney plan. Our patients need kidney transplants at an earlier time than we have provided them. By the time they recieve a new kidney, the accelerated phase of vasculopathy has rendered them blind and subject to peripheral gangrene or a myocardial infarction - and it's too late to prevent death from these or renal failure, since dialysis has not been easily tolerated for any length of time.. A cooperative national study would seem appropriate at this time.

A longterm study of the factors which may alter large-vessel vascular disease, such as the effect of agents on platelet stickiness is also desirable.

A particularly enigmatic problem has been the failure to demonstrate an immunilogical defect in the person with DM, to explain his lack of resistance to invading organisms, which may include agents capable of inducing neoplasms. To date the immune-factor(s) have been elusive.

To conclude my suggestions to the Commission, I would strongly urge that funding of future research include a generous mix of clinical as well as basic research.

Testimony Presented to the
National Commission on Diabetes
by: Mr. Donald Corning

Introduction

Why Am I Interested in Diabetes?

A. My borther Max
B. My son Doug
C. 2 Cousins

Main

How Diabetics Suffer

A. Personal

Max — Work
House Financing

B. Family

Now he is dead

Doug

Misinformation

A. Teacher
B. How he must deal with problems

Example -

Debbie Marshall

Conclusion

Education of Diabetics

A. Joyce Simmons (Rep.)
B. Head of Dept. of Health
C. Nick Blystra

LIBRARY OF THE JUVENILE DIABETES FOUNDATION

Testimony Presented to the
National Commission on Diabetes
by: Mr. Jerry Fine

WISCONSIN DIABETES ASSOCIATION

RECOMMENDATIONS FOR THE NATIONAL COMMISSION ON DIABETES

Mr. Jerry Fine, Parent of a diabetic
5548 N. Diversey Blvd.
Milwaukee, Wisconsin 53217

As parents, our primary concern is to make sure funds are available to finance research projects that will lead to a cure for diabetes. Beyond that, we are concerned with the following areas:

LITERATURE: Specialized, easy to read material is needed for parents of diabetic children that include medical information and information on the practical aspects of day to day diabetic management. Especially needed are the following: Newsletters, particularly for rural or out-lying areas, containing the latest information on diabetes research and management and diabetes related activities and projects, all specifically geared to the juvenile diabetic, and a Comprehensive Reference Book for parents that treats, in one volume, the medical, social, emotional and practical aspects of raising a child with diabetes.

EDUCATION: Training programs are needed to inform the public and private school teachers, school nurses, scouting and camp personnel, etc. about diabetes.

CAMP: Because of their function as a means of educating the young diabetic and helping him to accept his diabetes and the responsibility for its control, camps for diabetic children need the support of the Commission to insure their continuing existence and growth.

PARENT GROUPS: Parent-to-parent contact fills a need that goes beyond the purely medical aspect of juvenile diabetes and touches on the emotional and social adjustment of the diabetic child and his family. More emphasis on the coordination of parent groups on a national and regional level is necessary,

so as to encourage and facilitate the sharing of information. This can be accomplished through regional meetings of parents and health professionals under the auspices of the proposed regional diabetes centers.

FAMILY THERAPY: Social workers and psychologists need to be made available at low cost to young diabetics and their families who are having difficulty dealing emotionally with the disease.

NATIONAL REFERRAL SERVICE: A referral service, listing diabetes specialists and health facilities in the major population areas of the country is needed for families of diabetics who are moving from one area to another or who are traveling with a diabetic child.

DIETARY INFORMATION: Programs need to be developed that encourage the distribution of dietary information, geared to the diabetic child, and including information on the exchange values for special snack, treat, foreign and "regional" foods and information relating to the dietary problems of the juvenile diabetic who is ill.

7-23-75

LIBRARY OF THE U.S. DIABETES FOUNDATION

Testimony Presented to the
National Commission on Diabetes
by: Ms. Madleine Wake

STATEMENT TO THE NATIONAL COMMISSION
ON DIABETES

Chicago, Illinois August 4, 1975

Dr. Crofford and
Members of the Commission

Thank you for this opportunity to make known the diabetes-related concerns of Wisconsin.

To introduce myself - I am a nurse involved in diabetes education at St. Mary's Hospital in Milwaukee, Wisconsin and the President of the Wisconsin Diabetes Association.

The Wisconsin Diabetes Association is the affiliate of the American Diabetes Association serving the cause of diabetes in Wisconsin. Its purpose is defined as research, public education, patient education, and professional education. I would like to speak to these purposes.

The Wisconsin Diabetes Association considers research the first priority for the funds available for diabetes. However, research cannot be divorced from education and care. While we hope for the break-through that would mean cure and even prevention of diabetes, the Wisconsin Association is committed to serve the diabetics of Wisconsin. We seek to do this through education. It is through education that solid research findings will be effectively applied clinically. It is through education that the level of diabetes care will improve.

The present public view of diabetes shows the inadequacy of public education. This is well represented in the Medix film produced for T.V..

Public education in diabetes is necessary to pique the public conscience and generate support and funds for diabetes. Public education can attack much of the discrimination against diabetes from public service agencies as well as the public at large. We have received complaints from several individuals who have been told by agencies that their diabetes disqualifies them as adoptive parents.

The challenge of patient education is also great. The newly diagnosed diabetic needs basic education in self-care. But his education cannot stop there. A chronic disease demands continuing education in self-care.

The control of diabetes requires a delicate balance of food, activity, and insulin. Realistically this balance must be co-ordinated with the life-style of the individual with diabetes. Trying to fit a person to a set of rigid routines for long-term care of a chronic disease is ineffective. Yet many diabetics are regulated as inpatients by hospital routines instead of their own. A regime initiated in this way is inadequate when the patient returns to this home setting. He must be then regulated according to his normal living pattern.

Unless a person is acutely ill, his diabetes is better regulated in an outpatient setting. The advantages include:

1. Regulation and education geared to his own environment, with its activity, stress and dietary habits.
2. Immediate application of learned self-care.
3. Lower cost for outpatient care and teaching.

The problems that exist here include:

1. Third party payers do not fully pay for outpatient care and education.
2. There is no standard for the education or practice of nurses acting as primary health professionals in these clinics.

This leads to concerns for professional education. With few exceptions, any practicing nurse or dietician is involved in care and teaching of persons with diabetes. How much about diabetes is included in their basic professional education? How are new concepts of diabetes incorporated into their practice?

The position of diabetes teaching nurse is appearing across the country. To date there are no formal standards of preparation or practice for these individuals.

The therapeutic dietician must understand basic concepts of diabetes well enough to explain them simply to the patient and to individualize the diet considering other treatment factors. Knowledge of diet alone is insufficient for the dietician instructing persons with diabetes.

Although one of the most common disease in the country, diabetes is not recognized by many as a legitimate medical specialty. Compare the number of cardiologists with the number of diabetologists listed by the AMA. There is a need for more specialty education and for increased availability of consultation services. There is a need for convenient continuing education opportunities in current diabetes practice.

Another focus for professional education is the pharmacist. The retail pharmacist often functions as health consultant to the public. Incorrect, even dangerous, advice on U100 insulin has been given by the "corner druggist." How can we currently inform these professionals who contact diabetics concerning urine testing, oral hypoglycemics, insulin, and drug interactions?

The Wisconsin Diabetes Association has been active in many areas of diabetes education. We offer consultation for initiating patient education programs and a yearly seminar for diabetics. We present courses, workshops and lectures for physicians, nurses, dieticians, pharmacists, etc.. However, this is not enough. To reach the diabetics in rural as well as the inner-city , to reach the health professionals all over Wisconsin,we need a network for diabetic education with a center charged with defining standards of education and care and disseminating accurate information. We have thought of the advantages of using the University of Wisconsin system for such an approach. Its system of state universities and extension offices cover the state. We have spoken with people from the University who are enthused with the plan but see problems due to cut back of federal and state funds for education.

We need such a system to educate health professionals so that they can offer optimum, current care and education to the 200,000 diabetics of Wisconsin.

Finally, I would recommend:

1. a multi-focal educational plan (public, patient, professional education)
2. using existing resources when possible (University system, dial access, public T.V.)
3. geared to the needs of specific populations (inner-city, rural, middle class)

Thank you.

Madeline Wake

(Mrs.) Madeline Wake, R.N.
President-Wisconsin Diabetes Association
5215 North Ironwood Road
Milwaukee, Wisconsin 53217

MW/hf

Enclosures
Recommended Program for Diabetic Education at
University of Wisconsin Center for Health Sciences
Diabetic Patients' Perceptions of Their Own
Self-Management

RECOMMENDED PROGRAM FOR DIABETIC EDUCATION
AT
UNIVERSITY OF WISCONSIN CENTER FOR HEALTH SCIENCES

I. Introduction

The purpose of this document is to demonstrate patient education needs of the diabetic mellitus population cared for by the Center for Health Sciences (C.H.S.) and to recommend a program to meet these needs. The report is prepared by the Diabetic Education Committee (Appendix 1, Membership).

The initial concern of the committee was to increase the availability and use of information on diabetes by nursing staff through inservice education. This goal broadened to a review of diabetic education throughout the C.H.S. Since the spring of 1972, when the committee first met, it has become increasingly clear that there are many uncoordinated efforts of different services directed toward meeting the learning needs of the diabetic population and those providing their care. In addition, there are gaps in the diabetic education of patients.

This program request describes the present program and proposes an altered or new program. This program is viewed in five phases. Although the committee recognizes that the need for an ambulatory diabetic education and management program is pressing it is not recommended as Phase I of the program. The rationale for beginning with an inpatient program is based on the need for planning, development, and implementation with a more stable, predictable and available population of patients. We think that the need for developing or identifying appropriate assessment tools, mechanisms for the clinic operation, et cetera would be better met by having patients and families available to test out at least some aspects of program effectiveness. The time parameter that affects education in ambulatory settings was a major determinant in recommending an initial period in an inpatient program. The length of time spent in each phase of program is dependent on the clinic staff and administrative evaluation.

II. Documentation of Need for Program

The major source of data about patients and services used in our planning was inpatient data. Data about ambulatory programs and patient needs relied heavily on verbal feedback from various clinicians. The computer access to inpatients permitted a less subjective assessment through figures, chart review, medical service identification, and diagnoses.

A. Description of the In-Patient Diabetic Population

Table I presents the number of patients from January, 1972 to January, 1973 by computer categories.

Table I: Number of Inpatient Diabetics by Computer Categories for January, 1972 to January, 1973.

Newly Diagnosed	49
D.M. with Complications	21
D.M. with Acidosis	12
Diabetes secondary reason for Admission	457
D.M. with Complications (Secondary Diagnosis)	368
D.M. with Acidosis (Secondary Reason for Admission)	5
Kimmelstiel-Wilson	24
TOTAL	936

The average number of inpatient diabetic persons from all groups is approximately 17 patients per week. The actual number of inpatients at the C.H.S. in any one week may vary greatly. The age, sex, medical services, length of hospitalization, county, and data about the inpatient population are presented in Appendix #2.

Within this diabetic population a number of sub-groups were identified. The grouping is based on the differing learning needs of the sub-groups. The groups include:

1) The newly-diagnosed insulin dependent diabetic
   The newly-diagnosed non-insulin dependent diabetic

2) The "old" insulin dependent diabetic
   The "old" non-insulin dependent diabetic
   The "old" diabetic whose medical regimen is being altered, such as a person being taken off insulin injections

3) The child/adolescent diabetic

4) The families of diabetics

5) Diabetics admitted for a primary medical reason other than diabetes (e.g., eye operations)

Written assessments of some of the diabetic population at U.W.H. show they have deficits in self management skills. The literature suggests these deficits are shared by a high percentage of the diabetic population at large. Like other diabetics they demonstrate a need for education or re-education based on the changing knowledge in the field of diabetic management.

The U.W.H. population is characterized by a long-standing history of diabetes or individuals requiring special medical management (e.g., juvenile diabetics). Our population has a high incidence of complications of diabetes such as retinopathy and end-stage renal failure with the wide variety of physiological and psycho-social problems attendant on such problems. For an indication of the range of medical services admitting for this population to their service, see Appendix 2.

The general non-diabetic population presents with 10-15% learning disabilities. The average reading level of the older diabetic population is grade eight (1). The U.W.H.

(1) Thrush, R.S. and R.R. Lanese, "The Use of Painted Material in Diabetes Foundation," Diabetes, 1962, 11 (2), 132-137.

population has, in addition to this expected baseline, a number of patients with problems that affect their learning of self-management skills. Some examples of these are sensory deficits (e.g., blindness), habits of long-standing (e.g., dietary), and cognitive developmental level (e.g., children, retarded persons).

The population has needs in the area of coordination and continuity of care which are unique to the multidisciplinary, specialized resource structure of a medical center such as the UW C.H.S. and to the distance from the patient's community (see Appendix 2 for county of residence). Although some patients are followed by C.H.S. ambulatory services, many are followed by their local medical doctor (LMD) and/or public health nurse. Another portion of the pouplation is followed both by local and C.H.S. health services.

Chronic health problems frequently affect or stress the financial resources of patients and their families. Some of the characteristics of the U.W.H. diabetic population described alone, such as blindness, stress financial resources even further. Therefore, this population has special needs for financial resources or counseling, or both.

The inpatient population is characterized by great variations in length of hospital stay. (See Appendix 2.) The only relatively large group of short stay (0-4 days) patients are found on the ophthalmology service. This makes overall program planning on the basis of "average length of stay" quite unrealistic for the U.W.H. inpatient diabetic population.

In summary, the U.W.H. diabetic population demonstrates characteristics congruent with needs for specialized, highly-skilled health care in addition to the known needs of persons with diabetes mellitus in the general population. The U.W.H. population's characteristics differ in a manner congruent with the need for highly skilled assessment of medical management and self-care management and the capability for individualized adaptation may be effected by variables of stage of disease, response to changes in disease stage and regimen of care, learner characteristics, system providing health maintenance, financial resources and length of exposure to this setting.

B. Present Education Programs (1)

The review of present educational programs includes a consideration of inpatient and outpatient programs. Although the immediate recommendation of the committee is for a beginning in the inpatient area, outpatient programs could serve as a resource.

Inpatient. Information provided by A. Gormican, dietary department, indicates that clinical dietitians are assigned to inpatient units and are thereby available to patients and staff. Patients are seen upon request of the attending physician. Clinical dietitians visit each patient who has a special diet ordered. These visits vary from a superficial check regarding food preferences and similar issues, or may result in nutritional assessment and education of the patient. If diabetics are not on special diets then the latter kind of contact is not made.

(1) The term program is used to mean the demonstration of a plan or procedure that is used to deal with the assessment and education of most diabetic persons admitted to a unit. The program may be one that is maintained by a unit staff or by a member of a staff. The presence program is demonstrated in the patient care record.

The pharmacists in inpatient units are available for consultation with staff about some aspects of diabetic management. Clyde Nelson reports there is very little direct patient teaching done by pharmacists for inpatients.

Medical endocrinologists provide direct care for inpatients in their service. They are available on a consultation basis to other medical services and have given information and guidance about diabetic management to other health professional when this is requested. Dr. E. Gordon, Dr. Larson, Dr. S. Babcock, and Dr. G. Bargman have indicated that they are involved in the education of patients for self-management and see a need for such a service for both inpatients and outpatients. Some medical staff currently refer patients for diabetic assessment and education to dietitians or nurses known to have particular skills or interest in diabetic care.

Nurse personnel have indicated that a diabetic patient education program has been established or staff has demonstrated an interest in establishing such a program on 4W, 4CH, 5B, 4B, 4C, 6B, and 5E. The extent of these programs varies greatly. (Other programs or program planning may have been inadvertently missed.) In some cases the units have a program that involves the total nursing staff, in other cases one or two nurses have a primary interest in the program, while in yet others staff use a consultant from another unit for their occasional patients with diabetes. J. Espenshade (CHS renal-endocrine) and V. Gilchrist (nurse clinician pediatric/diabetes) have acted in a nurse consultant capacity to other inpatient and/or outpatient units.

Referrals to outpaitent clinic and to local health care resources are provided for some patients. Occasionally patients are seen by a member of the inpatient nursing or dietary staff. Medical endocrinology follow a proportion of their discharged patients on an outpatient clinic basis if the patient's medical status or local health care resources warrant this.

Ambulatory. There is a centralized, interdisciplinary diabetic clinic in the Pediatric Clinic, 1552 University Avenue, held one-half day each week. Dietary, medical, nursing and pharmacy services jointly developed the program in early 1973 at the request of Gerald Bargman, M.D. Several committee members had input into this clinic development. At present an average of 4 patients and families are seen each clinic day. Each patient is seen by each of the four services.

Family health service provides care for a small number of diabetics. They have provided primary care for some discharged patients on referral. In addition nursing staff at FHS have sought consultation with J. Espenshade regarding diabetic care.

Medical clinics provide follow-up medical care for diabetics of various medical services. There is no program for identifying diabetics and providing assessment and education. Jean Esch, R.N., said that on all renal patients from 4W with diabetes she receives referrals and provides follow-up on education programs. She indicated that the clinic may well miss patients if they do not receive a referral. The Endocrinology (adult) medical staff does patient teaching on a one-to-one basis when the see a need for this, but they do not do a systematic assessment of learning needs of patients in the clinic.

S. Babcock, M.D. at Student Health Service said that he does provide patient education where he has identified a need for this. He indicated strong support of an education center to which he could refer his patients.

W. Elliott, R.D., provides a dietary education service for ambulatory patients. She sees approximately 10 diabetic patients per month in this service. The group classes for dietary education were stopped in spring 1973 as too few patients were referred.

The present educational program for inpatient diabetics on some units is consistent with aims of adequate assessment and education for deficiencies in patients' families management of a medically sound diabetic regimen. There are personnel equipped with the knowledge and skill to provide a sound diabetic education program available in the C.H.S.

Nursing Inservice Education. Nursing Inservice has supported the presentation of a number of workshops on diabetic management by the 4W nursing staff. This program has included consultation with or content from dietary, pharmacy, medical and nursing education staff. The 4W staff have prepared written materials for patients and for staff on various aspects of management of diabetes. The materials have been shared with 56 UWH nursing staff who have attended the workshops and 38 nurses from the community.

C. Measures of Effectiveness of Present Program

A recent study of the effectiveness of dietary instruction of diabetic patients was completed at UWH using a LINC computer-designed interview (Appendix 3 - reprint). Findings showed that in a sampling of fifty diagnosed and treated adult diabetics, 75 percent were assessed as having unsuitable dietary habits. Knowledge of insulin (types, dosages and administration) was inadequate for even haphazard care. This sample suggests the need for further study of the effectiveness of therapy and subsequent educational programs for self-management in our diabetic patient population. A well coordinated educational program at UWH could achieve such an assessment.

The Nursing Aduit Committee has indicated that audits of patient records demonstrate a lack of health education provided for patients. This is true of the total C.H.S. population records reviewed, not only those of diabetic persons.

Community Agency Reports were received from Community Nurses on 5 of the 8 patients who were referred at time of discharge. The reports do not supply information on which to evaluate the effectiveness of the diabetic teaching program on the unit. Interestingly enough, assessments were done on 98 patients with diabetes from which the 8 referrals were made.

Since accreditation by the Joint Commission on Accreditation is in part based on a review of patient charts, a review of available inpatient charts of diabetic patients for a six-month period preceding December 1, 1973 was made. Patient records reviewed suggested that either all or most diabetic persons on units 4W, 4CH, and 2CH have been assessed and provided some program for diabetic education. There was some evidence of assessment and teaching and/or consultation in the records of some patients on 5B, 4B, 4C, and recently on 5E and 6B. The majority of charts reviewed did not evidence an assessment of self-care competencies in the area of diabetic management. This was true of medical, nursing, dietary and other notes in the patient record.

The Diabetes Education Center in Minneapolis (considered to be one of the foremost education units in this country) designs its educational program around a well-coordinated multidisciplinary approach. The patient is provided five, eight-hour days of intensive learning experience. The time provided for patient and family education at UWH who do receive diabetic education is, by implication, inadequate.

The high incidence of degenerative complications in our diabetic population implies a measure of poor control in the population admitted to UWH. On the two inpatients where a consistent program of patient assessment has been carried out for over a year clinicians could identify only two or three patients or families (of approximately one hundred assessments) as having an adequate knowledge and skill level for self-management within the prescribed medical regimen for diabetes. Discussions among the committee

members who represent allied health specialties and discussions with C.H.S. physicians suggest that the educational program as it now exists at UWH is doing little on a widespread basis alleviate these complications or to retard their progress.

Weaknesses or gaps in the present program for inpatient diabetic patients and their families indicate a need for:

- multidisciplinary coordination of care, including education.
- provision for group teaching.
- more effective use of consultation services available to staff providing care for diabetics.
- attention to the surgical population.
- systematic assessment of all diabetics admitted to the C.H.S. for diabetic care status including the need for continued care.

D. Cost of Present Program

Inpatient. On units providing nursing assessment and education of patients and/or families approximately 8-9 hours per patient stay of direct nursing education regarding diabetic care is involved in this process with young diabetics. The figure for the adult population is approximately 5 to 7 hours per patient stay unless the patient has a handicap (e.g., visual) which considerably increases the time needed for education. These figures are based on estimates of nurses skilled in this area of patient care and whose charting or referrals indicate that the areas of education recommended by the American Diabetes Association have been included. These patients are given care by staff nurse/clinical nurse specialists. The cost for seeing all patients (if they were seen) would be approximately 8,000 hours per year plus written materials.

The information on direct nursing care does not include time spent on development of referrals and contacting C.H.S. or community resources for follow-up on teaching programs. This time varies greatly with the writing skills of the nurse and the complexity of the referral information.

Diabetic patients may be seen by pharmacists or by dietitians or consultation may be provided by these staffs to other services. The actual dietary cost is not known. The estimate made by S. Crockett on the basis of 1972 figures is $600/month for time of dietitians and approximately $100/month for materials for inpatients. The actual cost of the present inpatient pharmacy program is $48/month based on approximately one hour/month direct teaching and 6 hours/month in consultation services.

We do not have information on the content taught or time spent in patient education by endocrinologists. However, several endocrinologists said they spent considerable inpatient and clinic time in this area when they are not assured of an adequate patient education program.

Ambulatory. The cost of ambulatory programs for diabetic patients is difficult to ascertain. The approximate cost of the pediatric diabetic program including medical management and education is $128/week for 3-4 patients and their families. The cost of diabetic education in Student Health Services, Family Health Services, endocrine, renal, opthamology and other clinics is not known.

Nursing Inservice Education. Cost estimates of presenting three inservice education programs, each six hours in length, by 4W personnel (1 clinical nurse specialist, 2 dietitians, 3 staff nurses), 1 pharmacist and 1 U.W. School of Nursing faculty member are to be made on salaries of the above mentioned persons. This estimate should include time that personnel contributed or used in preparation, slides, handouts, and secretarial time.

E. Other Findings Related to Program Needs

The committee collected statistics regarding the in-patient diabetic population and requested information about nursing staff competencies from the head nurse group (Appendix 2, Statistics on Patient Population; Appendix 4, Head Nurse Response to Questionnaire). This information suggested that there is some effort on units to provide for diabetic education, some identification by head nurses of needs of their staff for diabetic and teaching/learning information, and some evidence that units were not aware of the necessity of reassessing previously diagnosed diabetics, the need for which has been demonstrated in the literature, 1, 2, 3, 4.

Requests for information from interested physicians, pharmacists, dietitians and nurses both within and outside the Health Science Center were made. At the state level the Wisconsin Diabetes Association was supportive of the development of an education program in this geographical area. In a meeting (26 September 72 minutes) with representatives of the state, present diabetic education programs were reviewed. At the community level, the Visiting Nurse Service Program and hospitals in Madison supported the development of a program both for patients and families, and for professional providing care for persons with diabetes. The committee, therefore, identified no major overlap that would occur with the establishment of a formal program here, and there was support for program development in diabetic education and diabetic care.

Personnel in Madison hospitals told the committee that they would support the need for a diabetic education center. Their particular needs are related to provision of adequate staff education in diabetic education and care.

The Owen Clinic, Madison, provides a basic education for diabetics. It would appear that the program does not provide a resource that meets the needs for the inpatient diabetic population at UWH, nor for special learning needs in complex care situations which characterize our population.

The committee sought consultation from a dietitian and nurse, who helped establish the Minnesota Diabetes Education Center, through funding provided by the U of W C.H.S., and the School of Nursing. Center and community professionals considered issues, problems and mechanisms related to development of centralized diabetic program. Attendance and information generated at the workshop are available from Janet Gillen, Nursing Inservice. Many of the findings of the workshop are incorporated into the program recommendations of the committee.

1. Etzwiler, D.D., What the Juvenile Diabetic Knows About His Disease, Pediatrics, 1962, 29, 135-141.
2. Stone, D.B., A Study of the Incidence and Causes of Poor Control in Patients With Diabetes Mellitus, Am. J. Med. Sciences, April, 1961, 64/436-69/441.
3. Watkins, J.D., et al, A Study of Diabetic Patients at Home, Am. J. of P.H., 1967, 57 (3), 452-57.
4. Williams, T.F., et al, The Clinical Picture of Diabetic Control Studied in Four Settings, Am. J. of P.H., 1967, 57 (3), 441-451.

Exploration of the potential for establishing a coordinated diabetic education program with persons such as Marie Zimmer, Betty Jordan and various medical personnel within the C.H.S. who are interested in diabetic care, suggested that planning of a center-wide program should be undertaken.

III. Proposed Initial Plan

A. Considerations Underlying Program Development

There have been a number of assumptions underlying the committee's thinking about program planning. The first is that health care workers accepting the responsibility for the care of a patient with diabetes mellitus should know as much as the well-educated patient is expected to learn about his disease. A second assumption was made explicit in a committee memo dated December 6, 1972, that the specialization of inpatient and outpatient services in the Center is on medical lines. Our information suggests that when a patient is admited for a primary medical reason other than his diabetic condition the functions of medical reassessment of the diabetic condition and assessment of his knowledge in self-care skills are infrequently carried out. This gap in our program is of concern to each of the disciplines directly involved in the care of diabetes and of other services such as our retinopathy clinic. A third assumption of the committee is that the resources needed to adequately perform the functions outlined are better spent in direct care of patients and family in a centralized service as opposed to decentralized, unit based programs which require tremendous continuing education resources for staff. A final assumption is that the manpower and other resources required for a centralized program for provision of diabetic services are presently available within the C.H.S.

Philosophy and goals

I. We believe that continuing education for the diabetic person is a necessary part of his care.

II. We believe that the initial thrust of a diabetic care program should be focused on education of the diabetic person, and his family, for his own disease management.

III. We believe that education for diabetic management can best be provided by a centralized, coordinated program, the mission of which is diabetic education.

IV. We believe that the care of the diabetic population within the Center for Health Sciences can best be served by interdisciplinary planning.

V. We believe that the primary resource team involved in the management of diabetic care includes the patient and his family, and the specialized skills of dietitians, medical endocrinologists, nurses and pharmacists. In addition, this population requires consultative services from other departments, for example ophthalmology, dermatology and family health services.

The goal for the diabetic program is to carry out the functions identified by the committee. In a committee document, 27 October 72, the functions to be served by a diabetic program were noted. The broad headings under which functions were identified include: requirement and intake of patients; assessment; identification of clients' problems and strengths; planning for care; implementation of plans; evaluation of the plan and services provided; and readaptation of the program providing services.

The immediate goal (Phase I) of the program is to provide an education clinic for the referral of inpatients for assessment of their self-care skills to carry out their present medical regimen, the planning for diabetic education programs and the implementation of the planned program within the clinic, on the nursing units, and/or by referral to community agencies. The second short term goal is to identify the most appropriate learning resources for this population.

The third short term goal is to begin planning for provision of centralized education services for the ambulatory diabetic population (Phase III). Decisions will need to be made about using the clinic for education only or education and management as found in models such as the Kansas University Medical Center (see Appendix 5). The committee thinks that a strong centralized clinic model for inpatients should preceed ambulatory developments (see Introduction).

B. Rationale for Centralized Program

The committee has identified the present program in the C.H.S. and its beliefs about the educational and other care needs of the diabetic population. In collecting information about the size and characteristics of this population in this Center, it has become increasingly evident to us that there are major gaps in our care of individuals who have the fifth leading cause of death by disease in this country. There is increasing experimental evidence that adequate self-management of the diabetic person, based on sound medical care and his compliance with it, is necessary to the length and quality of his life. Patient education is pivotal to adequate self-management.

The level of knowledge and skill needed by professionals working with our population is, in our view, at the secondary and tertiary level. The costs of maintaining adequate staff education for all units having diabetic patients would appear prohibitive and mechanisms for facilitating this are difficult. This view is supported by information we have received from other centers dealing with diabetic patient education (Minneapolis Diabetic Education Center; Health Education Clinic, Kansas Medical Center).

A centralized clinic program would provide an identifiable center-wide resource. Since the clinics responsibility would be solely related to the diabetic population we anticipate that many of the present population who are currently overlooked, or inadequately assessed and educated with respect to self-management-skills, would receive this service.

C. Recommendations Regarding Initial (In-patient) Program

Section IV of the report describes the five phases of the program recommended. Only Phase I is described in detail.

Phase I of the proposed program would provide for an integration of multi-disciplinary services now provided for a small percentage of the inpatient diabetic population. Recommendations made are to provide for patient needs identified by the committee and others caring for these patients and families (see II, b). Rationale are given for each recommendation.

Program recommendations for the inpatient population include:

1. That physical space accessible to inpatients throughout the C.H.S. be identified for use of diabetic education programs.

Rationale

A centralized education service available to the identified population is a more reasonable alternative to the diffuse and variable services presently available. That the hardware and software for such a program needs to be centrally housed.

2. It is recommended that the clinic space be available for three later afternoons a week for a trial period. (This is assuming that the clinic space will be shared with other clinics.)

Rationale

This would provide a minimum of three time periods during which formal group work or informal group work could be provided for the patients and their families. It is a period during the day when the ambulatory space is said to be less congested, but more importantly, it would identify a time period for education of the diabetic and the family which is less encumbered by unit program, diagnostic tests, etc. It is recognized that the recommendation does not take into account the need for the clinic coordinator to have access to written and other material housed in the clinic area. It is recognized that the clinic coordinator may identify the need for evening classes or space, but the clinic administrator did not indicate that this would be a problem.

3. It is recommended that personnel and physical resources be provided for small group learning

Rationale

It is anticipated that with a centralized program, larger numbers of patients would be ready for learning at the same time. Small group work will both enhance the learning process and decrease the expense of one-to-one teaching with individual patients and families. It can be anticipated that common needs for knowledge in the areas of learning or relearning injections, urine testing, dietary management, changing knowledge about diabetes mellitus, and financial assistance may well be provided in such small groups for an inpatient population. It is anticipated that room holding 10-12 people plus teaching resources would be adequate.

4. That the clinic shall be administratively designated as a nurse clinic with a full time nurse coordinator specializing in diabetic care.

Rationale

Although the full time services of a multidisciplinary team are viewed as optimal for the population such a structure at the present time does not seem either necessary or financially feasible. Experience on several units has suggested that the nurse assuming responsibility for coordination of both assessments and care can provide adequate services for patient education.

5. It is recommended that the clinic coordinator have available a multi-disciplinary steering committee whose function is related to general policy affecting the clinic operation and who can assist in identifying and explicating clinic needs. This group is seen as an initial need rather than long-term requirement.

Rationale

The initiation of a nurse clinic as compared to the present medical clinics may pose some issues not identified by the committee or others. The steering committee is seen as an extension of the clinical coordinator's decision-making resources as they may affect policy or procedure. It may be quickly apparent there is no need for such a steering committee but experience in other settings suggests that this is helpful.

6. That the independent, interdependent, and dependent functions of the coordinator vis a vis other members of the multi-disciplinary team be clarified; or that mechanism for clarification of newly identified issues be provided.

Rationale

This would serve the purpose of providing some guidelines for referrals of patients or for the seeking of resources by the clinical coordinator. There may also be variations for example within the medical staff personnel as to the extent to which they wish to be appraised of or involved in diabetic education of their patients. Specifically, the pediatric endocrinologist has indicated that he would like a very close working relationship with any diabetic education clinic personnel and would prefer to operate his clinic in physical proximity to the educational center. Although this was in reference to the ambulatory service, the issue may also pertain to the inpatient population.

7. That specific commitments or mechanisms for the primary resource (V. A. pg. 13) services be negotiated and be made available to the clinic prior to the onset of this program.

Rationale

Since a full time interdisciplinary staff is not recommended at this time and since the need for specialized skills from each discipline has been identified, channels for seeking and obtaining the help of these interested disciplines are necessary. These may take the form of specific time commitments (as in the dietary program formerly held in the outpatient area) or making use of nursing referral or request for services to such departments such as dermatology, pharmacy, CSR supplies, and inservice education resources.

8. Although much patient education can be done in the clinic, it is recognized that follow-through on teaching plans requires the support of unit-based staff, and that communication channels for follow-through on plans made with patients in the clinic need to be established.

Rationale

Although much of the assessment and planning for self-management by the diabetic can be made within the framework of the clinic and its resources, present programs indicate the need for a system of communicating follow-up teaching or reinforcement of learning for the diabetic population. Our consultants from Minnesota indicated that the absence of follow-up can be a major block to an adequate program. This underscored a need for unit to clinic and clinic to unit communication channels that will facilitate patient and family care.

9. That dietary and pharmacy services consider reallocation of time presently used in inpatient diabetic education to the clinic (or use of personnel currently in ambulatory services during Phase I.

Rationale

During Phase I it appears that present personnel resources in dietary and pharmacy services can be more optimally used through a planned central service for this patient population. The assessment of staffing for the clinic program can be clarified during the initial period.

10. That consideration be given to whether clinic visits and visits by clinic staff to patients should be considered a direct or indirect cost.

Rationale

OUr information and knowledge of cost analysis is inadequate to make clear recommedations in this area. Both options have been used by other diabetic education centers. Our clearest information is related to the payment for outpatient services for diabetic education; for example, Utah has created a "hospital unit" and therefore

houses out patient learners there and payment is made through third party hospitalization coverage because these patients are supervised by RN on pms and nights (their charge is $100 per patient plus $25 per family member) and they handle approximately 10 patients per week plus one family; the Joslin Clinic charged $14-18 per hour on an outpatient basis; education is part of indirect costs on the inpatient services; the Minnesota group makes a direct charge of $75 per patient per week (with no charge for family) for the education part of the program while they use third party payment fees for lab work, food, insulin, testing materials and audiovisual materials; their inpatient services are paid for through an accounting system at the hospital. Funding is also obtainable for diabetic education programs through vocational rehabilitation, funds for disabled, through HMO prepayment plans and similar financial options. Given the plethora of options we decided we were not able to make recommendations in this administrative area.

11. The clinic will continue to assess diabetic patients and their families by means of an interview questionnaire and demonstration technique as is presently used in some areas in the hospital. Concurrently instruments or situational tests should be developed which can provide for self administered assessment insofar as this seems possible without compromising the assessment of knowledge of self care which is so essential to adequate planning for a diabetic education program.

Rationale

It is our impression that diabetics admitted to this center who are newly diagnosed and especially those who return as a result of inadequate care for diabetic management vary remarkably in their strengths vis a vis self care. The widespread use of self-assessment instruments, although necessary for program development, should not jeopardize an adequate and accurate assessment of the patient and family knowledge. It would seem useful on a comparative basis to develop or select assessment instruments which have comparable reliability for generating problem areas.

IV. Probable Extensions of Program

Following the initial phase of the program consideration should be given to subsequent phases. The committee feels some urgency to provide for populations beyond the inpatient population. However, it is thought that the first phase might act as a pilot program to develop materials and mechanisms related to ambulatory services.

Phase two of the program may be directed toward the diabetic population in the community at large. Workshops, such as that provided by the Pediatric Endocrinology service and an interdisciplinary group, are needed. Such workshops might be viewed as public relations efforts or a direct charge for the workshop or series of classes might be made. Specifically, parents have requested another pediatric program and the Wisconsin Diabetes Association (WDA) are encouraging such programs. This phase requires epidsodic preparation and may be carried out at the same time as Phase I.

Phase three of the program should be directed toward the outpatient population of diabetics. This would include patients being followed for diabetic medical management and those being seen for other medical regimens such as treatment of retinopathy. This program should provide services available to the inpatient population in the area of diabetic education. Consideration should also be given to provision of medical resources for outpatients having needs for diabetic medical management not available in other medical clinics. The ambulatory services offered by the Pediatric Diabetic Clinic provide a possible model for such a program.

Phase four of the diabetic education program is planned to meet the needs for professional education both within the C.H.S. and in other health care agencies providing care and education of diabetics. Information from the date and community level encourages the provision of such a program. Inservice and continuing education programs for dietary and nursing personnel have resulted in good attendance and high level of interest in such programs in Madison. In addition to continuing education programs, the clinic would provide a model for interdisciplinary care for a population.

The phase four program might include workshops, lecutres, consultation and role-models for any health professonals seeking knowledge about care of diabetics. It may be reasonable to plan such programs with the appropriate Wisconsin Extension Education department, or particular health service agencies. A WDA allied health conference is planned for spring 1974 in Madison.

Phase five of the education program is seen as an evaluative phase with the goal of determining the usefulness of a centralized resource for patient education. A review of the current literature[1] and discussions with clinicians in other health care specialities suggest the potential for either a health education center or the use of nurse clinics for management of patients with stablized chronic disease states or health problems related to renal disease, cardiovascular disease, obesity, etc.

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[1]Examples: Ulrich, M.R. and K.M. Kelly, "Patient Care Includes Teaching," Hospitals, Vol. 46 (April 16, 1972) pp. 59-65.

Appendix 5 and 6.

V. Resources Required for Proposed Initial Program

The following describes the professional personnel and support resources for the inpatient population diabetic education program described above. It assumes a diabetic education clinic that would meet with groups of patients and families for two half days per week or three shorter periods per week.

A. Primary Resources

Dietetic Component.

The dietitian needs to be available to meet with patients and for families during clinic times. The two half days or three shorter periods per week may provide time for planning and setting up group learning situations if the dietitian is not involved for both clinic times. If the dietitian is directly involved with patients during all clinic times, then additional time should be provided for planning purposes and for follow-up services to unit-based dietitians where needed. See table 2 for support resources.

The dietitian needs to be knowledgeable about the wide variety of dietetic management required by our population. In addition, skills in individual and group teaching of various age groups and learning levels are needed. The dietitian is envisioned as working closely with dietitians on the units from which patients are referred.

Medical Component.

Endocrinologists for child and adult services are needed for input into development of a basic educational program. The Minnesota group indicated that it was very helpful to have a physician or group of physicians available for teaching portions of the education program as well.

For patients admitted to the endocrine services in the C.H.S., the physicians may prefer to provide information on a one-to-one basis for their patients because of the wide variation of clinical problems patients present. However, for patients admitted to another medical service, it may be very helpful to have an endocrinologist available for patient education and for review of the patients' diabetic management.

The mechanism by which the endocrinology component will function with the inpatient diabetic education clinic could be varied depending on agreements reached with other medical services. (The medical component would function very differently with the development of Phase III of the diabetic education clinic.)

The physicians associated with the clinic should be interested in education of diabetic persons and their families and knowledgeable in medical management of diabetics with multiple problems. See Table 2 for support services.

Nursing Component.

The clinic nurse is viewed as having two roles. The first is in the educational process of patients and families and the second is in the administrative and coordinative aspects of the clinic. The nurse would be full time in this position, and from the onset of phase one of the program, will be available for work with outpatient diabetics on a one-to-one basis through arrangements with specific clinics.

The nurse needs to be knowledgeable about diabetes and the variety of diabetic self-care regimes used with our population. Skills in the teaching-learning process with various age groups and in the context of the family are essential. The coordinative aspects of the role suggest that the nurse be knowledgeable about and have skill in using resources in the C.H.S. and the community for continuity of diabetic care, willing to work with other members of the team and unit staffs, and willing to seek and use a steering committee, or persons responsible for establishing clinic policies, when appropriate. See Table 2 for support resources.

If Phase III was the model of a nurse clinic for management of diabetes for some patients (in addition to her educative functions) additional competencies are needed by the nurse. Knowledge and skill in some aspects of medical management are required of a nurse functioning in such a role (see Appendix 5 for example).

Pharmacy Component

A pharmacist would be required as a resource for population needs and available for one half day per week for group teaching. The nature of the content to be taught by the pharmacy component may require either additional pharmacy support or the use of the clinic nurse for group teaching. Clyde Nelson has suggested that the cost per hour of instruction would be $8.75 and materials approximately $1.00 per patient.

The pharmacist should be knowledgeable about the medications and urine monitoring materials used by diabetics. Skill in teaching of groups and individuals would be useful.

TABLE 2

SUPPORT RESOURCES NEEDED FOR PRIMARY TEAM

	1. office space	2. group teaching space & equip.	3. ed. materials pt./professional	secretarial	5. office equip. & storage & supplies	6. communication with in-pt. units	other
DIETARY	*	shared	shared & specif.	shared	shared	needed	cafeteria menus to provide foods for self-selection - possible LINC computer usage.
MEDICAL	*	shared	shared & specif			needed	
NURSING	shared & specif.	shared	shared & specif.	shared	shared	needed	transportation of patients available
PHARMACY	*	shared	shared			needed	

1. Office would be useful to have proximate to group teaching area for individual assessments and teaching when needed. It would serve as the nurse and/or secretarial space on a full time basis as all professionals would not have to have their office space contiguous with the group teaching space.
   *Could use present offices.

2. Group teaching space for 10-12 people with chairs, blackboard or flip charts. Need table or counter space for demonstrations and practice area. Storage area for educational materials is needed in this space or in the office.

3. Each component would require educational supplies and materials such as books, booklets, audio-visual materials, food models, urine testing materials, injections and oral medication materials, etc.

4. Secretarial services could be shared with other programs. Services woul include arranging for transportation of patients, receiving referrals from units, typing and sending referrals for program staff, locating resources, bookkeeping, assisting with arrangements for classes, & duplication of materials.

5. Office equipment and supplies include desks & chairs for secretary and nurse, two extra chairs, secretarial & charting paper supplies, typewriter bookshelves or storage cupboard and, filing cabinet, dictation equipment, telephone, etc.

6. A functional referral and feedback system between units with diabetic patients and the clinic need to be established in order to provide continuing care for patients & families, to keep clinic assessments as part of inpatient chart, provide for material planning by unit & clinic staffs, etc.

7. Each unit may have particular resources on an occasional or continuing basis. For example, LINC computer assessment (see appendix 3) may serve as both an assessment tool for patient knowledge and an assessment tool for the clinic program if used in a pre and post-test design.

B. Secondary Resources

The secondary resources required for the diabetic education center includes financial counselor who has knowledge in the area of money available for diabetics such as various insurance policies, state and other funding. This counselor could be available on an on-call basis.

Experience with inpatients has demonstrated a need for referral to, or consultation from, other medical and nursing services. For example, individuals who are having problems with foot care may need assistance from dermatology. As this is an inpatient population there may be several ways of handling such referrals. The first would be to request that the medical service responsible for the diabetic's care write a medical consultation if the need is identified in the teaching clinic. A second option is that the clinic coordinator could ask for a direct consultation from the service in identified areas of need. A third option would be a nurse referral to the ambulatory clinic of the medical service needed by the patient. In situations where need for nurse consultation is identified by clinic staff parallel forms of consultation might be used, however there are fewer system problems with other than medical consultations.

As it may be anticipated that between 10 and 15% of any population experiences learning problems, the clinic will need to have resources available for consultation in the area of child and adult education regarding problems with the handicapped learner. Not included in secondary resource needs is assistance with learners with visual or other handicaps as it is felt that those with specialized knowledge in diabetic education have skills or need to develop skills in this area.

Consultation in the area of development of audiovisual materials will be needed. This may include assistance from the nursing inservice personnel, assistance from the Instructional Materials Center at the School of Nursing, and/or the Bureau for Audiovisual Education.

The consideration may need to be given to the continuing education and updating of information and skills of the personnel involved in the diabetic education clinic. Specific problems may require the assistance of colleagues in other education centers. Budget for conferences or consultation should be allocated for the clinic staff.

Most of the secondary resources are available within the CHS. Mechanisms for use of these resources by clinic staff are all that is required in most instances.

C. Evaluation of Effectiveness of Phase One Program

Two types of evaluation are needed. The first is an evaluation of patient learning. The second assessment is an evaluation of effectiveness of the system or organization of the clinic operation. Since other medical centers have used diabetic care as a prototype for health education programs or for nurse clinic programs, these data may have relevance for population other than inpatient diabetics.

Assessment of Learners. Tools need to be identified (e.g., appendix 3, 4w assessment) or developed that will provide baseline data on the knowledge and problem-solving skills of the patient vis a vis his diabetic management. Any tool developed by staff should reflect desired patient outcomes developed by the multidisciplinary components as we believe that an adequate tool would measure different parameters of care including patient knowledge and ability to apply it. There are some studies in the literature which suggest such measures as urine test results, hypoglycemic episodes, number of hospitalizations and observation of care practices.

Pre- and post-program assessment of patients/families should be part of evaluation of effectiveness in addition to providing an individual assessment for the learner. Such an evaluation would have value for individual and program planning and for patient referrals.

Follow-up resources (e.g., LMD, PHN, OPD) for the population may provide a source of evaluation about the adequacy of the C.H.S. program for inpatient diabetics. Specific data may be sought from these resources. Mechanisms, such as review of referrals and nursing aduits, already exist within the CHS and may be called upon for assessment purposes. Data on non-clinic and clinic patients can be compared.

Assessment of learners' self care behaviors by direct knowledge tests and through indirect measures must be used to evaluate program effectiveness. Both short term and long term patient data are desirable. Non-clinic and clinic program patients and families might be compared.

Assessment of Clinic System. Data on patient outcomes provide one source of evaluation of clinic system effectiveness.

General feedback from patients and staff involved with them would provide some information about effectiveness and/or subjective impressions of the program. It may be preferable to evaluate each step of the unit-to-clinic, clinic-to-unit communication process to determine if they are adequate for the task of patient referral from units and return of information to unit services with adequate follow through on plans.

If If the assumption is made that all CHS inpatients with diabetes mellitus as a diagnosis are to have an assessment of knowledge and skill in self-management recorded, then present computerized data may be used for evaluation. Records of patient with diabetes as one diagnosis can be identified and reviewed for adequacy of recorded assessment. If the assumption is made that all CHS inpatients with diabetes as one diagnosis are to be referred to the clinic, then a comparison of patients referred with the total possible referrals can be a measure of system effectiveness.

Cost effective comparisons of pre and post clinic periods would not seem possible as we do not know the cost of present programs. If the information from clinicians about time spent on individual programs for 'adequate' learning is accurate some estimate might be made about present costs on the basis of inpatient diabetic population statistics. With the latter as a basis, cost effectiveness might be estimated.

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Madison, Wisconsin

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kas

Testimony Presented to the
National Commission on Diabetes
by: Ms. Sharon Snyder Bloodgood

DIABETIC PATIENTS' PERCEPTIONS OF THEIR OWN SELF-MANAGEMENT

BY

SHARON SNYDER BLOODGOOD

MASTER OF SCIENCE IN NURSING
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UNIVERSITY OF WISCONSIN-MADISON, 1975

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UNIVERSITY OF ILLINOIS MEDICAL CENTER

The purpose of this study was to explore compliance to a diabetic regime from the standpoint of the person with diabetes. Specifically, it was intended to gain information as to the extent of the diabetic's deviations from the prescribed regime, to gain insight as to what he defines as acceptable behavior for himself, to gain information about the circumstances under which he deviates from the regime, and to determine the attitudes he holds towards aspects of the regime.

A second intent of this study was the exploration of relationships among these and other factors thought to influence compliance; knowledge about the disease and its treatment, the duration of the illness, presence of symptoms associated with the disease, presence of symptoms associated with the treatment, and perceived severity of the diabetes.

Thirty-five subjects with a diagnosis of diabetes mellitus from East Central Wisconsin comprized the study sample. Data was obtained through use of a structured

interview and questionnaire.

The findings indicated that diabetics do deviate from their prescribed diets, both in the number of calories deviated and in the number of days per month when they deviated. The patterns of deviation were variable and were very individualized.

Another finding was that diabetics develop their own standards for acceptable limits in dietary intake. For 89% (31) these limits were different than their prescribed diets. Forty-five percent of the subjects deviated beyond their own limits of acceptability for diet.

People on low calorie diets exceeded their diets less than those on more liberal diets. Those on low calorie diets were also more likely to eat less than the amount prescribed and to do so more frequently than those on more liberal diets.

Correlations between extent of deviation in diet and knowledge, duration of illness, symptoms associated with the illness, and perceived severity of the disease did not reveal any significant relationships.

Correlations between the extent of dietary deviations and subjects' rated importance and concern about the diabetic regime were signficiant. As the perceived importance of the regime increased, or as concern about deviations increased, there was a corresponding decrease in the amount and requency of deviation from the prescribed diet.

Correlations between subjects' own definition of

acceptable limits for diet and knowledge, duration of illness, presence of symptoms associated with the treatment, perceived severity of the illness were not significant.

However, perceived importance and concern were significantly correlated with the subjects' own definition of acceptable diet limits. The highe- the importance or concern about an aspect of the regime, the closer the subjects' definition of acceptability approached that of the diet prescription.

The number and frequency of deviations from the medication regime were less than the reported deviations from prescribed diet. Correlations between deviations in medication and deviations in diet showed that those people who deviate the most from the medication regime also tend to be the greatest deviators from the prescribed diet.

Implications of study

Knowledge of the disease and its treatment did not seem to be a major factor influencing 1) compliance to a diabetic regime, or 2) the diabetic's own definition of acceptable limits for managing their diets. This does not negate the importance of knowledge for the diabetic. In order to effectively manage a medical regime, the diabetic must have knowledge about that regime. However, it is felt that self-management is more than knowing facts or knowing how to perform a psychomotor skill. Effective self-management of diabetes may be influenced by the individual's motivational level, decision making ability, and by situational factors. Equally important are his own

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perceptions of the disease, its control, and his own role in management.

It is felt that more research is needed to evaluate how some of the above aspects of self-management can be incorporated into teaching and counseling programs for diabetics as an adjunct to knowledge. Health educators who can incorporate research findings into their teaching programs are also needed.

Data from this study suggests that such things as experience in problem solving, anticipatory guidance about situations when the temptation to deviate may be greatest, and long term follow through by health professionals may be important ways to enhance management abilities.

During the interviews, the investigator heard many stories about health professionals who did not seem sympathetic or attempt to understand the diabetic's point of view. Another criticism mentioned was the confusing information given to the patient when they were first diagnosed. Either the information was too brief, the patient was not ready for it, or people gave them contradictory information. It seems in light of the significant relationships between importance, concern, and compliance that avoiding this kind of confusion which might undermine attitudes towards that regime would be very crucial. More comprehensive planning for diabetic education and better prepared educators would be very helpful in avoiding these problems.

Testimony Presented to the
National Commission on Diabetes
by: Mr. Gilbert Marks

G. L. Marks
St. Louis, Mo.

I. EXPERIENCES AND REASONS FOR MY INTEREST IN DIABETES

A.

1) Personal History

I am 52 years old and have been a "brittle" diabetic since age 35. During this period I have been subjected to both the psychological pressures (self-imposed and by society) and physical problems encountered by a large percentage of diabetics.

In the early stages of the onset of the disease, I experienced first-hand the all too frequent problems involved in detection, diagnosis, patient education and control of the condition. (Examples) *

B. Family History

Eleven years ago, the youngest of my five sons developed diabetes at age 8. In his case detection was quick because of my own knowledge of the classic symptoms and caution resulting from knowledge of the hereditary nature of the disease. His education and adjustment to treatment (insulin injections) was relatively easy because he was the second member of the family using insulin and subject to diet and life-style restrictions. (Give examples of friends and acquaintances with serious physical and psychological adjustment problems.) *

Last year my oldest son at age 25 was diagnosed as a diabetic. Again, detection was made readily. However, in this case age of onset, "about to be married", family status, and the demands of his profession -- concert pianist (inability to live and eat on a regular schedule) -- have made the physical and psychological adjustments much more difficult.

C. Complications

Most of our "diabetic lives" have been relatively trouble-free of physical complications -- although in the last few years I have developed some of the cardio-vascular ailments and resulting complications (neuropathy, retinopathy, circulatory restrictions) common in long-term cases of diabetes. However, the psychological effect in our family life has not always been pleasant -- and has been caused by the general public ignorance of the nature of the disease. (Examples pertaining to child personality development, job opportunities, insurance availability). *

In addition, several experiences involving treatment and availability of supplies in remote parts of the country have been shocking in the revelation of the lack of knowledge (and facilities) on the part of even the physicians and paramedics located away from the major medical centers. (examples) *

In recent years, I have been deeply involved in working for the local diabetic community through the St. Louis Diabetes Association. My involvement in this cause has further opened my eyes to the magnitude of the problems of detection, treatment, and education among the low income groups in the inner city areas. (examples) *

* Examples will be given at the time of testimony.

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III. RECOMMENDATIONS FOR IMPLEMENTATION OF THE NATIONAL DIABETES ACT (P.L.93-354)

A. Research: I feel confident that the nature of the law itself, the prior testimony received by this commission, and the makeup of the personnel on the commission guarantee that a large percentage of the funds allocated will be devoted to research into the prevention and cure of diabetes. I personally agree with such appropriations and have worked diligently to help raise funds for such research.

My major concern is that the fruits of such research may very well be harvested many years in the future. In the meantime the needs of the ten to fifty million Americans directly or indirectly affected by diabetes must be met through expenditure in other areas.

B. Public Education: It is essential that an ongoing program of public education be conducted to make people as aware of this disease -- its importance, its limitations, its methods of treatment, its symptoms, etc. -- as they are of the other more widely publicized major diseases. I would suggest the development of documentary films of various lengths for use by television stations, service organizations, and other interested groups.

C. Professional Education
I am not qualified to speak to methods of increasing the knowledge of general practitioners and internists on the subject of diabetes including new methods of diagnosis and treatment. Perhaps physicians testifying before this commission have or will make such suggestions. I simply know that the need exists based on my own experience with doctors who are not diabetic specialists. I can also see from the patient load of a large number of diabetologists with whom I have had contact, that there is an obvious need for encouraging more doctors and medical students to specialize in this field.

The needs for upgrading the skills in treating diabetics amongst the paramedicals, registered nurses, dieticians, etc. is even more obvious. The requirements cry out for the development of a basic curriculum, together with texts and audio-visual materials -- to become a required part of the training of all people in these categories.

D. Patient Education
Herein lies perhaps the most neglected -- and perhaps easiest to fill void -- in the whole area of services to the diabetic community. The physicians diagnosing and treating diabetes, the hospitals caring for diabetics, and the public health organizations servicing them -- just don't seem to have the time or materials required to do a proper, or even adequate, job in this field. I believe that a "package" should be developed that could be used by all of these groups in instructing diabetics. The package should include audio-visual materials, booklets, testing materials, information on resources available, etc. The package should require minimal professional supervision and should be available for self-education as well as group education. It should cover basic explanation of the disease, terminology, diet instruction, patient management of the condition.

In addition, counseling centers should be set up within the training centers outlined in the law. These centers could help with individuals encountering problems related to individual and family psychological adjustment, insurance, employment (in connection with the United States Employment Service), camps for diabetic children, drug use by juvenile diabetics, etc. They could

refer patients to qualified dieticians, physicians, and other informational sources. The existence and services of these counseling units should be particularly publicized amongst the lower income groups throughout the country -- those who normally have the least knowledge and the poorest opportunity to obtain adequate treatment.

E. Detection: I am sure no one can estimate the number of people who suffer irreparable damage or death each year as a result of failure to detect the onset of diabetes. I would suggest a massive campaign to point out the need for periodic testing of everyone -- which campaign would have to be accompanied by the setting up of test facilities readily available to anyone. Physicians should be encouraged to take blood sugar tests of all patients annually and blood testing should be made an automatic test of all patients admitted to any hospital or clinic -- just as automatic as the taking of blood pressure readings.

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Testimony Presented to the
National Commission on Diabetes
by: Dr. Francis Zacharewicz

SUMMARY OF PRESENTATION TO THE NATIONAL COMMISSION ON DIABETES

I. Background Preparation for Presentation:

As an official representative of the American Diabetes Association, Greater St. Louis Affiliate, I feel my presentation should reflect the concerns of the local diabetic community. Therefore, in addition to my personal knowledge as a physician, diabetes educator, and diabetes researcher, I questioned diabetics and parents of children with diabetes about their needs and concerns.

The survey showed one hundred per cent held the need for a cure and/or prevention as first priority. Also one hundred per cent hoped for an advancement in treatment. About fifty per cent were concerned about diabetes education of professionals, diabetics, and the community at large.

They felt many of the physicians, nurses, dietitians, and other professionals with whom they come in contact, either do not have the level of information about the treatment and control of diabetes that they, as diabetics, would expect the professionals to have, or the types of treatment are at such variance that the patient becomes concerned as to which is the "best" type of treatment.

The concern was expressed that patient education materials were inadequate to meet daily situations faced in modern society and that they all aimed at the white middle class group, therefore being of little or no value to other classes and those of low educational background.

Approximately one-third of those interviewed were concerned that the general public does not understand what diabetes is and the depth of its impact upon the individual and family.

II. Recommendations for implementation of the National Diabetes Act (PL 93-354)

A. National Standardization and Coordination

A national "clearing house" should be developed, preferably by the American Diabetes Association, to inventory all research currently being conducted in the United States, to pinpoint areas of duplicate research and determine areas where research is needed.

The national center should categorize the population into basic "audiences" and determine the diabetes educational needs of each audience. Over-all categories could be professional, patient and community. The professionals could be divided into such groupings as diabetes specialists and non-diabetes specialists, and then further subdivided into physicians, nurses, dietitians, etc. Patients could be grouped by socio-economic background, age, ethnic origin, etc. Community groupings would also have to take socio-economic, ethnic and other categories into consideration.

A survey of currently available professional, patient and community educational curricula, texts, brochures and audio-visual materials should be conducted, and the materials graded as to quality and audience preference. After deletion of poor quality educational materials and after determination of material gaps, sets of curriculum outlines with appropriate accompanying tests, audio-visual materials, tests, etc., should be developed for each "audience".

The national clearing house should be advised and/or administered by physicians and others with an in-depth background in diabetes appropriate to allow them to understand all of the potential areas of research and education which would be most productive at this time. These people should not be currently involved in diabetes research and education themselves, or receive any personal or professional gain through implementation of the programs and research recommended. They must be in a position to be objective in determining the diabetes educational and research needs and making recommendations as to how available funds are expended.

B. Regional Research and Education Centers:

A number of regional centers should be developed, again preferably under the auspices of the American Diabetes Association and its Affiliates, to conduct nationally coordinated diabetes research, and implement the package audience designated educational courses. These regional centers could be utilized by the national clearing house to collect the information on current research and educational programs and materials. The centers should assess the objective needs of the diabetic communities they serve via questionnaires. The centers should offer information and referral services to diabetics, counseling to diabetics and conduct public information programs. Complete regional public exposure of the existence of these centers and their programs is vital.

C. Research:

Basic Diabetes research should be continued and gaps in research funded. I feel there is a need for more clinically oriented research to improve treatment methodology in the time interim before a cure is found. The genetics of diabetes appears to be one of the areas of diabetes research which could be intensified. While a cure or prevention should be the ultimate goal, improvement of the treatment techniques must be accomplished.

D. Professional Education:

The "in-group" of physicians, dietitians, and nurses have attained an adequately high level of education in diabetes and its treatment. However, the majority of the medical community which does not specialize in diabetes is very inadequately informed about such basics as diagnostic techniques, treatment of diabetes, and treatment of its complications. Standards of diabetes diagnosis and treatment methods must be developed and disseminated to the grass roots of the medical community. Package curricula for the physicians, including gynecologists, ophthalmologists, and family practitioners, must be made available through the ADA Affiliates, medical societies and hospitals throughout the country for integration into physician continuing education programs. More articles of a clinical nature should be circulated to all physicians, as opposed to the pure research articles presently being circulated.

E. Patient Education:

Package curricula with appropriate audio-visual materials must be developed that will educate the patient in basic physiology, dietary treatment, and all other areas of information required for proper patient management of diabetes. There should be up-dating of diets and standardization of diets to reflect modern foodstuffs available. Educational materials for different ethnic groups and all socio-economic classes must be provided.

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F. Community Education:

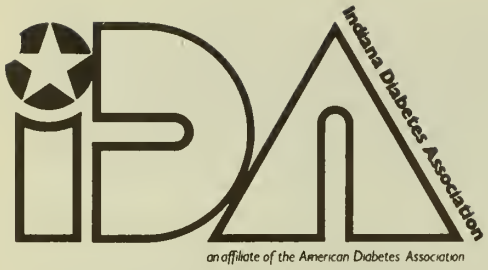
A series of TV specials about diabetes similar in quality to the National Geographic specials should be developed and aired either on commercial or educational TV. The level of understanding of diabetes, its symptoms, its impact upon the individual diabetic and upon the community at large must be increased, at least to the level of community knowledge about cancer.

Up-dated information about diabetes, its symptoms and treatment must be incorporated into the textbooks at the highschool level in order that parents of tomorrow will understand the importance of this disorder and its symptoms. Included must be education in proper dietary habits, since diabetes is a result of a combination of genetic, social and environmental factors.

G. Funding Recommendation:

Seventy-five per cent to Research, twenty-five per cent to Education.

Testimony Presented to the
National Commission on Diabetes
by: Dr. Richard Schnute



August 1, 1975

To: Victor Wartofsky, Information Officer
NIANDD, National Institutes of Health
Building 31 Room 9A04
Bethesda, MD 20014

From: Richard B. Schnute, M.D.
Immediate Past President of Indiana
Diabetes Association

Subject: Summary of Remarks to be made before
the National Diabetes Commission in
Chicago, August 4, 1975

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On behalf of the Indiana Diabetes Association, I would like to express my appreciation to members of the Commission for the sacrifices you have made, and are making, to conduct these important hearings around the country. Furthermore, I would like to thank you for this opportunity to present my views as a physician and as the past president of the Indiana Diabetes Association. We are all very much concerned with the short and long term pain, suffering and economic loss in this nation resulting from diabetes and its many complications.

It seems obvious that in order to alleviate this problem a number of thrusts must be made, and strengthened by Congress in passing PL93-354, fortunately, these thrusts will be made. These include an intensification of research efforts in an attempt to find a "cure" for diabetes; efforts at detection to find early and late diabetes in patients who have the disease but are unaware of it; and to educate patients, physicians, nurses and others interested in the disease, so that each might more efficiently meet the problems of diabetes. What variations on this theme are justified by the Indiana experience and situation? I believe that four points can quickly be made:

1) A maximum effort in basic clinical research in diabetes and metabolism must continue. We agree that the NIH with its study section approach to reviewing and funding of research protocols for both extramural and intramural research in Bethesda is meritorious and deserves mention in your report to Congress. Solving the needs of the diabetic in this country is of paramount importance and is the intent of PL93-354. Regardless of the differences in the philosophies of funding, however, we hope that all concerned will make every effort in cooperative implementation under the true spirit of the law.

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2) A realistic concept of a timetable for success in research in developing a "cure" for diabetes and its impact must be projected. However, a "cure" tomorrow is very unlikely to be of much help to the millions of people taking insulin since their pancreas is permanently diseased and in many cases totally replaced by fibrous tissue. Consequently, the real "cure" for diabetes must be prevention.

3) For those patients who already have diabetes and for their families who are waiting the therapeutic benefits of research, an effort of untold magnitude in terms of education and supportive care is sorely needed. This effort must involve effective education of professionals, paraprofessionals and patients alike. By effective education we suggest that behavior must be truly modified by the instructional experience. For example, professional postgraduate course attendance alone is frequently ineffective in the educational process without evaluation of the comprehension and retention of the course material. Testing and evaluation allows course planners a means of more effectively structuring material to make courses more meaningful, practical and useful. Voluntary audit and the design of programs of this type clearly fall under the purvey of the American Diabetes Association, the American College of Physicians, the American Academy of Pediatrics and the American Academy of Family Practice. However, coordination and stimulation of these groups by federally funded programs could appreciably improve diabetic care in this country.

4) Finally, we would like to propose Indianapolis, centrally located in the state with its other cities, as the site for a Diabetes Center and satellite centers to serve the estimated 150,000 Diabetics in Indiana and implement the above mentioned aims. There are three unique advantages of this site:

1) There is <u>only one</u> large centrally located medical school in the state of Indiana with eight branches or satellite medical educational centers. This single organized, functioning body would simplify administrative problems and allow a large center with satellites to be easily managed.

2) There is a unique communications network which includes television hook-up, telephone, tape and library reference facilities in <u>active daily operation now</u> linking the Indiana University School of Medicine in Indianapolis with eight satellite Centers of Medical Education, ninety community hospitals and indirectly two hundred communities in the state. Approximately forty hours of professional medical educational programs per week are viewed throughout this network and some of the hospitals are using the television hook-up for patient instructional services at this time. Two-thirds of all calls received by our central medical library is for reference material from these two hundred communities throughout Indiana.

3) Since the development of insulin fifty years ago, a unique relationship has been maintained in Indianapolis by the Indiana University School of Medicine and by the considerable expertise in Diabetes of the Eli Lilly Clinical Research Facility which is

geographically located on the campus. There is a cooperative effort involved in teaching, furthering research, and aiding in patient care of the Diabetic.

The potential for a Diabetic Center in this location with working satellites seems to be here and ready to go.

Thank you,

Richard B. Schnute, M.D.

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Testimony Presented to the
National Commission on Diabete
by: Mr. Hubert Fowler

NATIONAL COMMISSION ON DIABETES

I would like to thank the National Commission on Diabetes for this opportunity to testify at one of your hearings as constituted under Public Law 93-354.

My name is Hubert F. Fowler, and I am a Certified Public Accountant and the Senior Partner in a firm which bears my name in the practice of public accounting in Indianapolis, Indiana. I am a known diabetic and have been for approximately 14 years. I require insulin injections twice daily with each injection comprised of a mixture of Regular and NPH insulin. I try to adhere to a 2100 calorie daily diet using the weigh and measure system for calculating my diet. Additional information which might be of significance is my status as President-Elect of the Indianapolis Diabetes Association and a member of the Finance Committee of the Indiana Diabetes Association.

As a known diabetic, I am one of 6 million people; as a user of insulin, I am 1 of 1,250,000. If we assume all those afflicted with diabetes, both known and unknown, I am 1 of approximately 10 million. Being a numbers man, may I convert these statistics to my home state. Speaking for Indiana I represent 1 out of approximately 256,200 known and unknown diabetics in our state and to reduce it even more I am 1 out of approximately 32,000 people in the state of Indiana who take insulin. It has been estimated by various people that the annual economic loss from diabetes is approximately $4 billion which means Indiana's share of the economic loss is approximately $102,500,000. This economic loss comes about through the cost of hospital care, the cost of pharmaceuticals, the cost of professional medical care and the actual work time lost.

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As a lay person with diabetes, I have come to the conclusion that one of the most important aspects in the treatment of my disease or any one afflicted with diabetes is what I would call "mental hygiene". To me it is important that I know and understand my diet, my exercise program and my prescribed medications. In my view, if I can establish the parameters for living with diabetes, then my psychological outlook, my daily regimen and in truth my whole future is brighter and more meaningful because of this so called "mental hygiene". With this attitude, there is no reason then that I could not be employable, even though in my instant case I have my own business, that I cannot be a responsible citizen and take an active part in my community, my profession and, in fact, my world.

It seems to me then that the National Commission on Diabetes must recognize certain areas of responsibility in a program related to diabetes. May I recommend that patient education is upper most as an area of responsibility and I believe this term encompasses the broadest definition of total education of the patient. Certainly the Commission must be aware of a form of public education and must promulgate both education and understanding together with detection so that we may winnow out the estimated 4 million persons in our country who possess undiagnosed diabetes. Based on my own experience, I feel professional education is mandatory. Certainly there is a capable cadre of professional people who know much about diabetes. However, I find that many in the medical profession and those professions allied with the medical professions such as pharmacists, nurses, dietitians and health educators are not as knowledgeable as they could be. I would be derelict in my duty if I did not recommend and suggest that the Commission, in truth and in fact, foster research. It occurs to me that research can be a material aid to those generations of juvenile and unborn diabetics. However, I subscribe that there are several million of us who need attention now. There are many ways in

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which the Commission could react and I subscribe that those areas dealing with a broader field of community service might best be covered by Voluntary Health Associations such as the ones I represent and therefore recommend that the National Institute of Health can best serve us all by not making the spectrum of their coverage too broad.

Testimony could most certainly be given to this Commission using the narrowest of basis, but I believe that a narrow basis of knowledge tends to indicate a narrowness of the mind and I therefore choose not to comment on the myraid of afflictions which might befall me in the future because of diabetes. Rather I prefer to encourage testimony under all the values which I think Public Law 93-354 portends.

It has been my privilege to present this testimony and a written statement of my remarks have been filed with the proper persons.

If it pleases the Commission, I will attempt to answer any questions which you may want to ask me.

MEMBER: AMERICAN INSTITUTE OF ACCOUNTANTS

Testimony Presented to the
National Commission on Diabetes
by: Ms. Roberta Freeburger

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Outline

I. Proposed purposes of Diabetes Education Act

- A. Educate the health professional to teach diabetics
- B. Provide teaching materials at minimal cost
- C. Expand and upgrade present diabetic education programs

II. What Diabetic Education is being done now in Chicago area

- A. Group instruction or education of diabetics
- B. Individual instruction of diabetics

III. Possible Roles of a Diabetic Center

- A. Team of health professionals to go out to hospitals
  1. To teach hospital professional staff how to teach diabetics, what teaching aids are available and how to use them effectively
  2. To provide a public relations function telling all health professionals what services and materials are available at the center.
  3. To provide help with in-service training of employees in the hospital about diabetic diets and preparation of meals and do actual in-service training of nursing home employees.
- B. Provide continuing education of health professionals about diabetes
- C. Provide a 24 hour phone hot line for use by diabetic patients and by health professionals

Our proposed purpose for the National Diabetes Mellitus Research and Education Act (pl 93-354) or Diabetes Center is:

1. To participate in educating and updating the health professional (doctor, nurse, dietitian, social worker etc) in treating and teaching the diabetic patient.
2. To provide a minimal cost interesting, stimulating teaching materials for diabetic patients.
3. To actively expand and upgrade present diabetic patient education programs in hospitals

II. What Diabetic Education is being done now in the Chicago area

A. Group instructions for diabetic patients

Currently approximately 60 hospitals in the Chicago metropolitan area of a possible 110 hospitals (75 in Chicago and 35 in suburbs) have responded as giving some kind of group instruction to diabetic patients. These group classes are usually limited to hospital diabetic patients and out patients and their families. Some hospitals open classes to the immediate surrounding community but many do not.

Some hospitals have problems in communicating the availability and need for these patient classes for utilization by their staff doctors.

The cost for these classes varies from free to $25/patient for a series of classes. Some classes are offered weekly and some once or twice a month.

The teachers of the classes may be a variety of combinations:

Nurse - dietitian
Nurse only
Nurse - dietitian - social worker - doctor
Nurse - dietitian - doctor - pharmacist

The hospital administrat may provide staff time for the classes. In some cases health professionals have donated their own time (without pay) to teach classes because they saw a need for them. Most of these group instructions involve a series of 3-5 classes attempting to cover all areas of diabetic care. These classes should be expanded and upgraded and be provided by all the hospitals open to all diabetics in the community. Ideally the cost of these sessions should be free or of minimal cost to the patient.

The health professionals teaching the classes should all be salaried so the professionals can devote more time to class preparation and formation of recall and out-reach programs for all diabetics in the community.

This expansion of group education of diabetes and salaries of the teaching health professionals takes funding of money. Many hospitals financially are not able to meet this funding. Federal money from the Diabetes Act could help in this area.

B. Individual instructions or individual education

1. Most hospitals in the area give some in-patient individual diabetic instruction on diet, giving insulin and/or taking oral hypoglycemics. These instructions are hurried when the patient is ready to go home and do not cover the complete care and treatment of the diabetic and the reasons for this care. This approach is inadequate to meet all needs of the diabetic.

2. Many hospitals and clinics give individual out-patient instructions but again these are many times limited in scope to diet and some nursing care of diabetics. The out-patient instruction may be free in some hospitals or a fee of $5 -$25 per patient. Many times the availability of out-patient instructions in diet are not actively communicated to doctors because volume might be too large for a small staff of hospital dietitians to handle.

Out-patient instructions are usually limited to patients of doctors on staff at the hospital or clinic.

There is a need for more federal legislation to cover cost of nutritional instruction of the out-patient. One ammendment to medicare to cover nutritional instruction for out-patient was voted down in congress a couple of years ago. It would save money to instruct people on diet as out patients and avoid the diabetic patient having complications requiring hospitilization.

III. Possible Roles of a Diabetic Center

Although the speaker is primarily interested in nutrition education of the diabetic, these roles could be utilized by all the health professionals (dietitians, nurses, doctors, social workers, pharmacists) concerned with the care of the diabetic.

A. Formation of a team of teaching health professionals (doctor, nurse, dietitian, social worker etc.)

1. This team would go out to each of the hospitals for a 2-3 hour session to teach the hospital professional staff (doctors, nurses, dietitians, social workers) how to teach the diabetic, what teaching aids, and bibiliographies are available and how to use them for their patients on their equipment and facilities.

2. By going out to the hospitals, more of the hospital staff could attend. Hospital administrators would be more willing to allow hospital time for attendance since travel time and expense is avoided. By going to hospital locations, the team can deal with the individual hospitals problem of teaching and the most effective way to reach the typical patient of that hospital (educated, uneducated, ethnic groups etc).

3. A team of this sort would serve the function of public relations for the Diabetic center because it lets all the health professionals know what materials and sources are available from a diabetic center. If the health professionals know about the center and it's services they can utilize them. If they don't know about the center's facilities the center won't be utilized no matter how many good services it provides. The team could also function by training hospital staff how to provide effective in-service training for their employees to prepare and serve diabetic meals and provide actual training of employees of nursing homes where no professional staff is available for the training.

B. The Center could serve as a source of continuing education for all the health professionals to learn and up date their knowledge of diabetic care and education of patient by offering:

short courses
seminars
work shops
monthly bulletins
compiling all visual aids available
compiling bibiliographies of all books and articles available

C. The center should be a source of development of colorful, attractive visual aids. Exactly what form of aids are needed will be discussed by another speaker. This speaker wants to emphasize the need for these aids at a free or minimal cost for group instruction of diabetics.

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I emphasize the words, "colorful" and "attractive", there are many pamphlets on diabetes but most are written words with very few pictures for a high school education level. The Meal Planning with Diet Exchanges booklet by the American Diabetes Assoc. and the American Dietetic Association has many pictures of food but is only in black and white because the cost of color production would be too high for most hospitals to afford. Some interesting booklets in color are available but the cost is high for mass use.

Booklets or Pamphlets

Diabetes Guide book by T. Davidson and M. Goldsmith, Litho-Krome Co, Columbus, Ga, 1972 $3.00/copy

Juvenile Diabetes by L. Travis, South Tex. Diab. Assoc,,Pasedena, Tex. 1969 $1.50/copy

Diabetic Unit Poster by Dietor systems, Ann Arbor Michigan $3.00/copy

Slides - Planning Diabetic Diet by National Health Films $85.00

Program of Simplified Diabetic Meal Planning for 4th grade ed. or lower Developed by University Hospital of Cleveland V.A. Hospital of Cleveland, Ohio 1969 Approximate $200.00 - $300.00

Some of the mentioned booklets and posters are cheaper with bulk rates but the cost is still at least $1.50/patient. Since price must pay for development and or profit of a company, the cost remains high. The center's role would be to develop more, colorful materials using federalfunds for the cost of development with hospitals only paying a minimal on-going cost of handling and postage. Then hospitals could afford to present more interesting, effective diabetic group instruction.

Another point for emphasis is that drug companies such as Upjohn and Lily in the past have provided free material to use in teaching the diabetic patient. Due to current economic conditions, these companies have cut their budgets and no longer provide this free material. Also it would be much more effective to separate development of instructional material from a business which has a special interest in selling its products.

D. Another role of a diabetic center would be a telephone hot line where a diabetic or a health professional could call 24 hours a day for immediate answers to questions not only about diet but about nursing care, medical care and psychological problems of diabetes. Beside answering immediate questions, diabetics could be referred to other agencies , groups or hospitals to answer their questions or for medical care. While a hot line would be useful in a metropolitan area, it would be of even more benefit in a rural area where physical distances make it difficult or impossible for diabetics to visit their doctor and hospital or for health professionals to attend training classes at a Diabetes Center. One might say that a diabetic could always call his doctor or hospital for answers to questions but frequently doctors are busy and unavailable. In some hospitals, it may be difficult to get a call in to the proper person to answer the question. The American Diabetes Association local chapters do answer some questions over the phone, but hours are necessarily limited, and chapters probably are not funded to handle a large volume of calls that would result if the service was actively advertised to all diabetics.

Example of effectiveness of a hot line:

In St Louis, one nurse (Jean Suren - presently at Michael Reese Hosptial, Chicago, Illinois) operated a hot line for juvenile diabetics of 3 endrocrinologist physicians on staff at St. Louis Children's Hospital. Approximately 200 patients and their families used the service. The average was 200 calls/month with bulk of calls in the day-time hours. Her results were that after 1 year's use of the hot line, emergency room visits were reduced from 8/month to 1.5/month. Hospital Admissions after the initial diabetes diagnosis were reduced from 4/month to 1/month.

In summary, while the speaker's main interest lies in dietary education of the diabetic, it is realized that the best health care for the diabetic is approached through a team of health professionals (doctor, nurse, dietitian, social worker etc) educating the diabetic and family about his disease and proper self care.

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Testimony Presented to the
National Commission on Diabetes
by: Ms. Patricia Girczyc

Cook County Hospital
1825 West Harrison St., Chicago, Illinois 60612 (312) 633-6000

Report to the National Commission on Diabetes

Diabetes and the Socioeconomically Deprived
Cook County Hospital

I. Inpatient/Out-patient Care
   A. Approximate numbers
   B. Budgetary priorities
   C. Continuity of Care/ importance for chronic disease control

II. Patient Education Problems
   A. Educational level of patients
      a. illiteracy
      b. lack of basic health education
      c. prevalent myths
      d. language
   B. Family Structure
      a. lack of adequate acceptance of diagnosis
      b. weak support systems
      c. financial perspectives
   C. Physical/Emotional Handicaps
      a. poor vision/blindness
      b. amputations
      c. other diseases
      d. alcoholism/drug abuse

III. Lack of Adequate Personnel
   A. No statistical data
   B. Insufficient numbers of paramedical personnel for follow-up/teaching
   C. No counselling services specific for diabetics

IV. Focus
   A. Educational materials
      a. clear, concise information aimed at pt. level
      b. large print non-technical explanation
      c. development of audio-visual materials
      d. bi-lingual literature
   B. Dietary reinforcement
      a. pictures and models of serving sizes
      b. ethnic diets
      c. utensils for measuring
      d. trained dietary staff for follow-up
   C. Special equipment
      a. syringes and utensils for blind patients
      b. appliances for physically disabled patients.
   D. Coordinated Services by Area
      a. exchange of ideas
      b. sharing of data

COMMISSIONERS: Edwin L. Brashears, Chairman; Charles A. Davis, Secretary; Mrs. W. Miles Burns; John W. B. Hadley; Ellsworth E. Hasbrouck, M.D.; George Hill; Richard H. Kessler, M.D.; E. Duke McNeil.

Executive Director: James G. Haughton, M.D.

Testimony Presented to the
National Commission on Diabetes
by: Mr. Richard Roeing

Richard S. Roeing - Officer, Rock River Diabetes Association

Rural Youth

The extended school day, occasional lack of facilities, and the desire to keep their diabetes a secret presents a real problem in rural areas.

Most diabetic youth are instructed to eat breakfast, lunch and dinner at approximately 10AM, 3PM and before bedtime. The rural youth may be up at 5:30 AM on the bus at 6:15 AM to arrive at school for an 8 oclock class. The break may come anytime during the morning hours and lunch as late as 1:30 PM. This difficult time schedule coupled with the fact that most diabetic youth will sneak their morning snack in metropolitan schools, something that cannot be accomplished in many rural schools, increases the frequency of insulin reactions.

Most of these problems can be solved if the diabetic youth could admit to his or her desease and the general public was better educated regarding diabetes. Money spent in T.V. messages that would help remove this psychological problem in diabetics of all ages, could be the most valuable effort we could make.

Rural Adults

The diabetic farmer has a problem obtaining consistent exercise as recommended by most physicians. The farmer will work 14 to 16 hours per day during planting and harvesting seasons and may have little or nothing to do at other times. Most farmers of my personnal acquaintance adjust their insulin intake without benefit of a physician's advise, and many use the buddy system when in the fields to guard against a severe insulin reaction, going into a coma, without detection.

Any education of the individual diabetic farmer aimed toward a more scientific approach to adjusting the amount of insulin used would be very helpful.

Rural Medical Facilities

The high ratio of patients to doctors experienced in the rural areas is well known and needs no amplification.

What does need to be brought to the medical profession's attention is that the rural doctor cannot assimilate all the information generated by all the specialties. It seems that many of our physicians believe their job is complete after they have the patient on insulin - nothing could be farther from the truth.

The new diabetic spends about 5 days in the hospital learning to administer their own shots, obtaining a diet and are sent home totally unprepared to face the continuing changes in their physical characteristics and the psychological problems they will encounter.

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Richard S. Roeing - continued

Since the doctor cannot give each patient the time they need, are not experts in diabetes, cannot always be found when needed, perhaps another level of medical personnel are required.

Para-Medics or specially trained nurses could solve many of these problems if they were mobile. Specially trained medical personnel that have the mobility to travel to the diabetic for patient and family education would really be of service in the rural communities.

If this type of medical service was made available free detection services could be provided at country and state fairs greatly expanding the detection effort.

Diabetes Mellitus

Testimony Presented to the
National Commission on Diabetes
by: Mr. Raphie Raphalson
Adult Health and Aging
Chicago Board of Health

I. Health Education

To draw as many people as possible to be made aware of the various danger signals of diabetes mellitus, we need good health education centers and peripatetic health educators.

II. Detection of Diabetes Mellitus

Here the greatest need is for early detection in local centers and in Mobile Units by a qualified staff of M.D.'s and lab technicians--especially physicians when standard glucose tolerance tests are needed to determine the extent of the disease.

III. Referral and Follow-up

& A newly detected diabetic must be referred immediately to the best available sources of medical care, e.g., hospital clinic or own physician who know much of the patient's history.

IV. However, a thorough follow-up on the patient's condition after diagnosis by M.D. is of prime importance. Diabetes Mellitus is a disease which will stay with the patient a lifetime and he has to change his life style, maybe his hygiene and his eating habits. His physical and mental condition has to be taken care of as well as sociological background.

V. Simpler language in pamphlets in different languages

Pamphlets easily understood by patient, his family, as well as peers, should be distributed so that education and conditioning are accomplished at the same time. Braille and sign language should be used. The patient should be made aware of diseases which can preceed or develop later on such as kidney involvement, blindness, coronary and circulatory conditions.

Recommendations: Out-Reach

1) Qualified personnel

a) Doctors
b) Nurses in related areas, i.e., Public Health, hospital and clinic
c) Social workers
d) Nutritionists

2) Follow-up

a) Qualified personnel (as listed above), to make home visits to provide guidance in all matters pertinent to

1) medication
2) food intake
3) proper exercise habits
4) personal hygiene
5) Churches
6) Public Service
7) Announcements on T.V.
8) Newspaper, Magazine, etc.

and to allay all fears and misconceptions on the part of the patient, in regards to all ramifications of this complex condition.

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REGIONAL DIABETES EDUCATION CENTER

Testimony Presented to the
National Commission on Diabetes
by: Ms. Lois Fuhrer

My name is Lois Fuhrer. I am a registered nurse currently involved in Patient Education. I have worked with diabetic patients for the past three years at a 500-bed Northside hospital in Chicago. (Illinois Masonic Medical Center). Our hospital serves a changing neighborhood, with a significant Latino population. The surrounding areas bring us Greek, American Indian, and Appalachian families. We border on Chicago's affluent Lake Shore Drive and serve these residents also. I see diabetic patients and their families from all economic, social, and educational strata.

Today I would like to speak about the need for a Regional Diabetes Educational Center (RDEC). I would envision this center open to any interested person or groups. It would be available to the diabetic when he is ready to gather additional information about his condition. The Center services would be available day and evening hours to reach a greater number of persons. The Center would serve as a Resource in diabetes education for the community at large. The Center would serve as a coordinating body for those health workers engaged in diabetes patient education.

I propose such a center for the following reasons:

1. Presently, in our area, formal diabetes education programs are found primarily in our acute hospitals. In a recent survey, only 50 out of 120 hospitals in the Chicago area reported having formal diabetes programs. Of these, only a few support out-patient programs, and then primarily for those affiliated with

the institution. The programs generally are series of classes using lecture and demonstration. Little opportunity exists for the patient and his family to "practice" skills under any supervision. In addition, the vast majority of these programs are "one-shot" series without any planned follow-up.

The American Diabetes Association, Greater Chicago & Northern Illinois Affiliate, Inc. has excellent material written for middle class, well-educated English speaking people, but at present cannot offer any in-depth, on-going patient education for the community.

2. If patient education is to be effective, we should anticipate those changes in the person's behavior that lead to a better controlled diabetic. Patients learning about their condition in hospital programs cannot truly put into practice what we are attempting to teach while they are hospitalized. In addition, the patient may not be able to understand fully what will be expected of him after discharge. His anxiety about being in the hospital will affect his ability to learn at this time. Therefore, a referral center for the patient to continue his learning is vital.

3. Those of us engaged in diabetes patient education need resources ourselves to better meet the needs of our patients. We need better teaching tools and better methods to deal with the problem learners.

4. The diabetic in the community needs educational support when he is ready to learn; when he feels the need to change; when he desires to become a healthier citizen. He needs learning experiences geared to his level and using his language.

The proposed RDEC could function at many levels. A STUDY LABORATORY could evaluate assistive devices for persons with impaired manual/visual skills and abilities, evaluate new teaching tools, try out new approaches in Adult learning, and test out new teaching methods. Also, work can be done with those persons thought to be problem learners, such as the mildly retarded, marginal personality, those with language differences, those poorly motivated, those with severe social problems, and the

teen-ager.

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A RESOURCE LABORATORY could maintain a bibliography or library of teaching aids, assistive services, and written material for the patient to use. It could serve the professional community by providing guidelines for establishing teaching programs at local levels such as hospitals, outreach programs and HMO's. This resource lab would be available to the podiatrist, dentist, pharmacist, social worker, and community worker, in addition to the doctor, nurse, and nutritionist.

At another level would be the CLINICAL TEACHING LABORATORY. Here health workers engaged in patient education could come to develop their teaching skills. The clinical lab would provide us with information suggesting those methods that most effectively change behavior that, in turn, produces a better controlled diabetic. This lab would be the core of the educational center for the diabetic. Here the person could be referred, whether in group or individual study, or study with his family unit.

Finally, STANDARDS and guidelines could be established for programs developed in the community. Those engaged in Patient Education could be certified by the RDEC. Criteria for insurance companies and governmental agencies providing financial assistance could be written.

In order to implement this Center, we need to address ourselves to the patient's educational needs. We need to evaluate what the patient learning level is and also need to assess his willingness and ability to change his behavior. Levels of learning needs will have to be established. For example:

Level 1 - We would need to consider his safety; i.e. accurate intake of medicine and diet, recognition of acute complications (hypo- and hyper- glycemia, infections).

Level 2 - Family re-adaptation, food habits, life-style, acknowledgement of his problem, and willingness of his family to share in the responsibility in maintaining him as a healthy individual.

Level 3 - Re-adaptation to the community, his work, and his social activities.

In closing, the RDEC would be a resource to the patient, the professional, and the community in diabetes patient education. Here the professional can develop his teaching skills and increase his effectiveness in working with problem learners. The patient and his family can find help in continuing, improving, and up-dating skills required to better control his diabetes. Standards can be established to develop effective programs within the community, and health workers can be trained to set these programs into action.

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AD HOC SEMINAR MEETING NATIONAL DIABETES COMMISSION HEARINGS
AMERICAN DIABETES ASSOCIATION, GREATER CHICAGO & NORTHERN ILLINOIS AFFILIATE

July 19, 1975

DIABETES REGIONAL PATIENT EDUCATION CENTER

OPEN TO ANY INTERESTED PERSON OR GROUPS
AVAILABLE TO PERSON WITH DIABETES WHEN PERSON IS READY TO GATHER ADDITIONAL INFORMATION ABOUT HIS CONDITION
SERVICES OF CENTER WOULD BE AVAILABLE DAY AND EVENING HOURS TO REACH GREATER NUMBER OF PERSONS
CENTER WOULD BE EQUIPPED TO SERVE THOSE WITH DIFFERENT LANGUAGE ABILITIES AND SKILLS
CENTER WOULD SERVE AS RESOURCE IN DIABETES EDUCATION FOR THE COMMUNITY AT LARGE
CENTER WOULD SERVE AS COORDINATING BODY FOR HEALTH WORKERS ENGAGED IN DIABETES PATIENT EDUCATION
MOBILE UNITS

STUDY LAB

EVALUATE NEW TEACHING TOOLS
EVALUATE ASSISTIVE DEVICES FOR PERSONS WITH IMPAIRED MANUAL/VISUAL SKILLS
EVALUATE NEW APPROACHES IN ADULT EDUCATION
TEST OUT NEW TEACHING METHODS
WORK WITH PERSONS THOUGHT TO BE PROBLEM LEARNERS: THE MIID-RETARDED, MARGINAL PERSONALITIES, THOSE POORLY MOTIVATED, THOSE WITH SEVERE SOCIAL PROBLEMS

RESOURCE LAB

MAINTAIN BIBLIOGRAPHY/LIBRARY OF TEACHING AIDS, ASSISTIVE DEVICES, WRITTEN MATERIAL,PROGRAM GUIDELINES, COURSE OUTLINES
AVAILABLE TO PATIENT AND HEALTH CARE WORKERS

CLINICAL TEACHING LAB

SERVE AS CLINICAL AREA FOR THOSE IN HEALTH EDUCATION TO DEVELOP THEIR TEACHING SKILLS
DETERMINE WHICH TEACHING METHODS EFFECTIVELY ENCOURAGE PERSONS TO CHANGE THEIR BEHAVIOR THAT IN TURN PRODUCES A BETTER CONTROLLED DIABETIC
SERVE AS REFERRAL CENTER FOR CONTINUING EDUCATION; GROUPS, INDIVIDUAL STUDY, AND FAMILY UNIT

STANDARDS

ESTABLISH GUIDELINES FOR LOCAL COMMUNITY TEACHING PROGRAMS
ESTABLISH CRITERIA FOR APPROVAL OF QUALIFIED TEACHERS, PROGRAMS IN DIABETES EDUCATION
ESTABLISH CRITERIA FOR INSURANCE COMPANIES, GOVERNMENTAL AGENCIES TO USE IN PROVIDING FINANCIAL ASSISTANCE TO EDUCATION PROGRAMS

IMPLEMENTATION

ASSESS PATIENTS LEVEL, DIAGNOSIS PROBLEM AREAS, DETERMINE PATIENT AND FAMILY WILLINGNESS TO CHANGE BEHAVIOR

LEVEL OF EDUCATIONAL NEEDS:

LEVEL I SAFETY
LEVEL II FAMILY RE-ADAPTATION
LEVEL III RE-ADAPTATION TO COMMUNITY

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PROPOSAL

SATELLITE CENTERS FOR EDUCATION AND SELF MANAGEMENT OF DIABETES MELLITUS

Submitted by: Sally A. Myers, R.N.M.S.
Clinical Specialist-Medicine

PURPOSE:

Each satellite center to be located in major population area to provide:

A. Individual and family instruction and guidance in establishing a pattern of diabetic management.

B. Clinical experience and training in diabetic management for health professionals.

PERSONNEL:*

Administration through main Diabetic Center
Clerical assistants for office routine, scheduling, etc.
Medical Director
Nurse Clinicians
Nutritionists
Working as consistent team with specific caseload of patients and families.
Laboratory Technicians
Social worker - caseload by referral
Psychiatric testing and counseling service (may be through main Center)

* To be determined by caseload.

MECHANISM OF ACTION:

1. Patient and/or family may seek information and assistance independently or be referred by the attending physician.

2. Each client will be evaluated for knowledge, ability and needs in relationship to diabetes management.

3. A program of instruction will be outlined and scheduled for the client and a copy will be sent to the family physician.

4. A protocol of laboratory tests, medication and diet will be established by the therapeutic team under the guidance of the Medical Director.

5. Each client will be assigned to a specific nurse-nutritionist team.

6. Each client will be periodically evaluated for progress with a report sent to the attending physician through the Medical Director.

7. A regular series of workshops and classes designed for patients with diabetes and special problems will be offered by the Center staff each month at times convenient for clients being instructed.

8. A "hot line" for questions and assistance will be maintained 24 hours per day.

9. New health personnel and students (medical students, nurses, nutritionists, social workers, etc.) will be scheduled to work with experienced personnel.

10. A-V classroom materials-hardware and software-will be available as determined by need and through main diabetic teaching center.

11. Each satellite center will follow prescribed standards of care. (As established through main Center).

12. Each satellite will assist in gathering data for third party payers and research in the care of diabetes mellitus.

PHYSICAL SET UP: Facility with:

A. Small clinic rooms for individual patient work.*
B. Large classroom for formal class.
C. Smaller rooms for group sessions.
D. Reception-office area
E. Laboratory facilities.

* Size determined by population served.

HOURS OF SERVICE: 1. Health personnel will be available at times most convenient for population served - i.e., evening hours for working clients, Saturdays for school-age children, etc.

2. Telephone "hot line" will be maintained 24 hours per day.

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NOTE:

The main problem in developing the satellite center briefly described is the lack of adequately prepared health professionals in the field of diabetes. Therefore, a major thrust should be made to locate interested, qualified people, to encourage and assist these people in continued growth, and provide supervised learning for new individuals wishing to come into the field.

Testimony Presented to the
National Commission on Diabetes
by: Ms. Joan Gaffney

NEEDS OF THE DIABETIC PATIENT IN THE HOME SETTING

The diabetic needs a variety of educational experiences. He needs the help of a competant team of health professionals that could include doctors, nurses, dietitians, social workers and others. The purpose is to enable the diabetic to become independent in handling his condition.

I would like to speak about the advantage of home care to the diabetic person and mention some of the present unmet needs of the persons under our care.

In the fiscal year 1974-75 The Visiting Nurse Association worked with 1265 persons whose primary diagnosis was diabetes. There are many other patients with a secondary diagnosis of diabetes.

I would like to cite a situation in which home care was able to prevent rehospitalization of an adolescent diabetic for about 22 months through close work with the mother and out-patient clinic.

Jessie had cerebral palsy, was mentally retarded and an epileptic. At the age of 17 he was diagnosed diabetic. His mother was Mexican. She spoke a Mexican dialect and her English was limited. She could read neither Spanish nor English. Jessie was born out of wedlock. His mother regarded him as a "child of sin" and felt that his many physical problems were God's punishment. Despite the mother's attitude, through a carefully developed educational program done primarily in the home she was able to learn a method of diabetic control. This would not have been possible except for the co-operation of the out-patient department which limited its educational attempts so as not to confuse the mother. Eventually Jessie was able to learn to give his own insulin. During this time Jessie did make many trips to the emergency room for insulin reactions but these gradually diminished.

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During the 22 months Jessie did not require rehospitalization. This represents a tremendous money saving to the community.

At the present time a large number of diabetic patients referred to our agency are first diagnosed at a clinic visit. They are told they are diabetic, are given supplies or the prescription for supplies and told the nurse will see them in the morning. For these people home care is where the teaching is begun. We assist them with making the needed adjustments in their total life-style and work with them toward the goal of independance.

Because we do go into homes we are able to reach the homebound diabetic. Ms. S. was recently hospitalized for cardiovascular incident. While in the hospital she was diagnosed diabetic. She was returned to her apartment where she will hopefully complete her recovery. She is able to remain in the community with the help of neighbors who shop for her and a niece who helps her on the weekend. We worked with her to establish a rehabilitation program in her home. As part of that program we do diabetic teaching - reinforce previous learnings, attempt to motivate, answer questions and give additional information.

In the individual's home we have an opportunity to help the diabetic work into his life situation the new ways taught by the hospital or clinic. The new diabetic methods can be reinforced and adapted to his life-style under the guidance of a health professional.

Good examples of this: Mr. J. who is a cab driver and an insulin independent diabetic. He works about 18 to 20 hours a day. In his off duty time he plays cards. He doesn't return home for 2 or 3 days at a time. He lives in a low income housing project with his wife and twelve children. His wife is very worried about him and when he is home she tries to prepare his food according to the suggested food plan. We attempted to help him develop a more routine life-style consistent with his diabetic condition.

We were able to help him set a more regular meal plan and make small changes in his life-style.

The second person is a woman who is a madam. She too is an insulin dependent diabetic. She has a life-style that has no set daily routine. Because of this her diabetes presents many problems.

These individuals would not mention their life-styles in a clinic setting. But in the home an experienced health professional can quickly identify the problems and assist the individual in making appropriate alterations in their daily lives - actually help them to cope with their diabetes.

In the home we can see the actual physical setting of the individual. No refrigerator, no stove, an oven that has been used to heat an apartment and can't be used for cooking, because the thermostat is destroyed, only a hot plate for cooking and a window sill for refrigerating food. Many people find it difficult to admit that they are poor and don't have some of the basic necessities of life. These things can be seen on a home visit. Many times action can be taken to get needed equipment for the family. Sometimes we can suggest ways of using the present equipment. We see the foods, cooking methods, insulin technique and daily routine that the family now has. We can offer concrete suggestions to close gaps in a diabetic program. Many times knowledge of the stores and restaurants in the individual's community can be used to guide the diabetic toward a better food plan.

In the home setting we have the opportunity to work with the whole family. We see the individual not as a isolated unit but a part of a whole. We can help the family members to understand the condition and hopefully be more supportive to the diabetic. We are able to talk with the people who buy, cook and serve the food. We have a chance to teach the whole family about diabetes in a setting that they feel comfort in and can freely ask questions. The health professional is in the family's territory. We can

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assist the family in understanding and making needed changes in their life-style.

In our work in the home setting it is possible for the trained professional to become aware of family problems. This is especially true of families with a child diabetic. The family as a group may need guidance in coping with the situation

Unmet needs include:

1. Educational programs tailored to individual needs. Readiness is an important factor in determining the individual's program.

Some of our families would benefit from structured classes soon after diagnosis, later they could use a forum type setting to help them handle their problems of living as a diabetic. Diabetic cooking experiences could be set up for the individual and their families. These types of services could be offered at 8 to 10 sites in a large metropolitan area on a rotating basis open to any diabetic.

Problems with the existing classes are:

a. available only at a few locations in the city and during work hours.
b. offered only to in-patient and/or out-patient diabetics of that particular hospital or clinic.
c. the diabetic can attend only if he lives within the geographical area.
d. travel from one part of the city to another can be expensive and put the individual at risk.
e. the cost of the service may be more than the person can afford.

2. Counseling services for diabetics especially, for the families of juvenile diabetics. The services are needed at different sites throughout a large metropolitan area and must be available at a reasonable cost.

3. The poorly sighted diabetic needs an insulin syringe that works— one that delivers the full insulin load and does not change the dose after a few days of use, A syringe that is readily available.
4. I will mention briefly the need for more teaching materials. There is a tremendous need in our community for ethnic food lists, recipes, visual material, large print information, interesting materials at reasonable costs. There is a need for multi-media tools for education of the patient and professional.

   Others giving testimony will speak more directly to this point.

Joan T. Gaffney, R.D.
Visiting Nurse Association of Chicago

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Testimony Presented to the
National Commission on Diabetes
by: Dr. Marvin Schwarz

MAC NEAL MEMORIAL HOSPITAL
3249 S. Oak Park Avenue • Berwyn, Illinois 60402 • A/C 312-797-3000

Marvin J. Schwarz, M.D.
Chairman, Division of Psychiatry

Statement on Deficiencies of Current Approaches to the Treatment of Juvenile Diabetes Mellitus by Marvin J. Schwarz, M.D.

1. Primary care of the juvenile diabetic is largely in the hands of tertiary care endocrinologists or secondary care specialists in Internal Medicine. Medical and para-medical aspects of the treatment programs are based upon a value hierarchy in which endocrinologists are primary.

2. The fact that the major goal of management may be defined around metabolic variables does not led to the implication that the same variables have primacy relative to treatment. In actuality, successful treatment of the juvenile diabetic is related to considerations of life style consistent with the achievement of such metabolic goals.

3. In our experience at MacNeal, the successful control of life style variables demands that peer behavior, alcohol use, drug use, and problems in emancipation from the kinship family structure into the hierarchical peer matrix, demands that the juvenile diabetic accept and operate within a value base which is conflictual to peer culture and is actually counterculture.

   This demands dependent relationships to the primary care physician and family, which requires major areas of real life intervention on the part of the physician. Emotional aspects and interpersonal aspects appear poorly controllable by intellectual or classical psychotherapeutic approach. In addition, the physician must become involved in the peer structure of the adolescent so as to facilitate the development of positive peer pressures.

   The diabetologist must become a primary care physician or withdraw and permit others to care.

   These issues must be faced by the professional community. For example, we should stop talking about diet and start talking about eating. We should stop seeing juvenile diabetics as children who will accept our moral messages relative to alcohol and drug abstainence and begin seeing them as the syringe oriented people that we have made them.

   The medical community must become aware of the peer implications of being a syringe oriented syringe user. We must begin to work with

MEMBER OF THE METROPOLITAN CHICAGO GROUP OF UNIVERSITY OF ILLINOIS AFFILIATED HOSPITALS

families relative to adolescent culture and its destruction of its diabetic child. We at MacNeal are prepared, either by ourselves or in the cooperative efforts with other institutions, to explore the development of more effective treatment models. We are prepared to explore multiple approaches, including a psychiatric model, a Family Practice model, and an experiemntal peer treatment model.

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Testimony Presented to the
National Commission on Diabetes
by: Ms. Sewell Gelbard

Testimony by Sewell F. Gelbard, M.S.W.

I am Sewell Gelbard, social worker at Camelot Care Center, 1502 Northwest Highway, Palatine, Illinois. (This is a residential treatment center for emotionally and socially disturbed children.) In my two years at this facility we have had several diabetic children in residence. Formerly, I was employed as a caseworker by State of Illinois Department of Children and Family Services and had in my caseload several diabetic children , who required specialized psychological and social services.

Our experience with the childhood diabetic is limited to the chld, who has multiple problems often coming from a destructive home environment. These children constitute only a small percentage of the children in the state. Our residence are wards of the State of Illinois and are placed by the state childwelfare agency. We are a short term treatment facility where the primary treatment modality is a structured milieu therapy program which imploys a developmental theoretical base. Individual, group and family therapy,are also used whorever they are indicated. We house eighteen children in our main residential facility and fourteen older adolescents in our two group homes. The diabetic children have been fully integrated into the program,however,currently only one diabetic child is in residence in the program.

Only few residential treatment facilities in the this state will accept the diabetic child. Inquiries that I have made shown that the diabetic child is one of the most difficult categories of children to secure placement for. Lack of medical personnel on the staff ; insufficient knowledge on the part of staff and administrations about the disease and the increased demands placed upon the institution in terms of staff and budget are some reasons why diabetics are excluded from the programs. We have found that with proper medical advise, the costs and task of treting the diabetic child is only minimally more difficult and costly than the treatment of other children with similar psychological and social problems.

Diabetes is often used by the child as a manipulative tool to meet their needs for attention, or as we say in the transactional analysis language , which we employ with the children, "Many diabetic children have learned to collect cold pricklies or negative strokes". For an individual with problems with depression the diabetic carries with him a loaded pistol, which can be self detonated at any time. The inter-relationship of the diabetes and depression has been observed frequently. A high sugar count causes anxiety, which further aggravates the diabetic condition , which further causes anxiety and depression. This is further complicated by guilt over the fact that the condition was not controlled due to personal neglect. The diabetic child is often prone to game playing (Berne defines game as "An ongoing series of complementary ulterior transactions progressing to a well defined, predictable outcome.") The aim of these games with the diabetic is usually self castigation. They often seek out situations in which encourage either derogatory comments or for others to feel sorry for "poor me".

The families of these diabetic children can be characterized by parental inconsistencies particularly in terms of the way they deal with the illness. There is usually considerable guilt on the part of the parent, who might be a diabetic herself or himself. This child is a painful reminder of their own decision to have children even though they were aware of the risks of having a diabetic child. The parental ambivalence towards the child becomes pronounced and the child gets his needs for attention and affection primarily when he or she is ill. The child becomes the center of the family when he is sick. The child can thus easily manipulate the family through the use of the illness and this pattern becomes solidified. When the child reaches adolescence the parents begin to place a different set of expectations upon the child and will not tolerate this manipulation. They become angry over this manipulation and this anger is often interpreted by the child as rejection. This new pattern of use of the use of the diabetes for attention, which is then not gratifying and is followed by perceived

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or actual rejection begin to emerge and fosters the childs own negative self image. Either the family must establish some new type of interactional pattern or the diabetic member becomes so disruptive to the family equilibrium that he or she is expelled, If the child is placed and there is no sucessful intervention in the family or with the child the same pattern of illness, rejection, self depreciation, illness continues.

The central task of treatment with these children is essentially the same as with our other children. That is to help the child to begin to build some sucessful experiences and to become goal directed. We try to switch the children from loosers to winners. With the diabetic the task is more difficult,asit is impossible to completely ignore their negative behaviors because of the health risks. We have instead attempted to make illness as unrewarding as possible by dealing with it in a matter of fact manner. We confront the child with the manipulative nature of his behavior and try to teach him other sources of gratification. We also try to make good health more stroking than poor health. Two weeks of acceptable sugar levels then is givenmore attention by the milieu than will a hospitalization. These techniques have been somewhat sucessful although, this can not be statistically validated at this time.

Structure in terms of dietery control and a strict supervision of medication is also an important variable in our treatment of these children. Set times for injections and our control of diet are rather rigid upon the childs entering the program. The expectation that he will become self sufficient in these areas is strong and we eventually only monitor the process allowing the child as much freedom as he can handle. This structure minimizes the chance for manipulation.

From discussions with many individuals, who deal with placing of children in residential treatment, there appears to be a need for more institutions which will accept the diabetic child. Either additional funding or greater availability of free medical consultation by those familiar with the total picture of treating the diabetic needs to be provided. I find the segregating of the diabetic child into seperate programs to be objectionable.This segregation into a homogeneous grouping tends to focus

the attention on the illness, rather than to defocus on the illness as a source of gratification. These programs tend to further reinforce the fact that they are different from the normal population, something that the adolescent does not want.

Research to determine the extent to which these dysfunctional diabetic families exist would also be helpful. Statistical data on the percentage of diabetic children, whoend up in residential treatment or in psychiatric hospitalization as compared to the non diabetic population would show whether this matter warranted further study. More in depth studies would also be helpful in program developement for child welfare agencies.

Although I am unable to document the need it appears to me from my experience that the needs of the diabetic child, who is in need of placement away from home because of being emotionally disturbed are not being met in this state. If programs exist they are not well publicized outside of those working primarily with diabetics.

There also appears to be a lack of awareness on the impact that childhood diabetes has on the family. Research on the subject is scarce. Intervention with these families prior to the crises stage by a skilled social work practitioner can alleviate the need for placement of the child.

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Testimony Presented to the
National Commission on Diabetes
by: Dr. Carlton West
KO-MED Health Center
Mid Southside Health Services
Plan

MID-SOUTHSIDE HEALTH SERVICES PLAN
2600 South Michigan Avenue
Chicago, Illinois 60616

DATE: August 4, 1975

TO: National Commission on Diabetes Seminar
Chicago, Illinois

FROM: Komed Health Center, Chicago
Ferguson Health Center, Chicago
affiliates of
The Mid-Southside Health Services Plan
A Non-profit Organization established in 1971 by O.E.O. to set up a health care system based on the HMO concept.

PURPOSE: This presentation is made on behalf of the patient population which we serve - 335,000 primarily lower income Blacks.

I. The Overall Problem

The magnitude of this problem is readily appreciated when current statistics are reviewed. Over 4 million people in the United States are afflicted with diabetes. Diabetes ranks 7th among the 10 leading causes of death in the United States - 18.9/100,000 (1970). Twenty-two (22%) percent of the population carries the gene and although it's estimated that 10% of the population actually has the disease, only 55% are recognized.

II. Our Problems

Our problems relate to both identification and control. In a community whose medical care traditionally has been crises oriented, organized diagnostic and treatment programs are sparce. It is not surprising then that most diabetics in this area are discovered only incidentally usually when seen for a complication of the disease. In a small random survey carried out at Ferguson Health Center, 5 in 40 or 12% asymptomatic patients were found to have abnormally high blood sugars.

Factors which contribute toward delay in recognition include:

1. Lack of regular physical exams.
2. Lack of knowledge of the disease, its signs and complications.
3. Cost factor (primarily screening blood sugar).
4. Lack of access to diagnostic facilities.
5. Lack of proper family counseling where other family members are known diabetics.

Conversely, similar problems are encountered by the diabetic of this and similar communities:

1. Accessibility of a comprehensive treatment facility.
2. Coordination of care when complications require many consultants.
3. Maintenance of proper diet.
4. Availability and cost of medication.
5. Availability and cost of ancillary items, i.e., special shoes, prosthesis, syringes.
6. Follow-up - high rate of missed appointments and drop-outs.

III. Recommendations

The prevalence, high morbidity and mortality justify stepped-up efforts to control this disease. In this community there exists a great disparity between application of available medical knowledge and control of this disease. Better control can be achieved and problems of the diabetic lessened if the following is provided on a community basis:

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1. Free diabetic screening, especially for relatives of diabetics.

2. Family counseling - to give the diabetic and his family insight into the disease and its complications.

3. Local coordinator who would be familiar with all available resources and could direct the often frustrated patient.

4. Access to a comprehensive treatment facility.

5. Financial supplement for diet.

6. Financial supplement for medications.

7. Financial supplement ancillary items.

8. Positive action campaign to identify diabetes.

9. Community education programs.

Testimony Presented to the
National Commission on Diabetes
by: Ms. Betty Wedman
American Dietetic Association

National Commission on Diabetes

August 4-5, 1975

McCormick Inn, Chicago

To: National Commission on Diabetes - Oscar Crofford, M.D., Chairman

From: Betty Wedman, M.S., R.D., Coordinator, Nutrition Information, American Dietetic Association; Public Relations Chairman, Chicago Dietetics Association

I would like to address my comments to the role of the Registered Dietitian in combatting diabetes misinformation.

Diet is the cornerstone of therapy for patients with diabetes and the Registered Dietitian palys a key role in that therapy. The Dietitian assesses the patient's need for nutrition information on good eating habits and develops a rapport with the patient. The patient needs to recognize the dietitian as the reliable source of diet information in order to avoid any misleading information sold in bookstores and health food stores.

Providing education and motivation for the patient with diabetes to stay on the prescribed diet is another major responsibility of the dietitian. Compliance with the prescribed diet helps the patient achieve weight and disease control. Without adequate education and motivation the patient often is tempted into self-diagnosis and self prescription for weight and disease control. Inaccurate guidance in printed and verbal form is readily available and the patient finds it difficult to distinguish fact from fiction. The following are two examples from my daily mail bag.

(I will read 2 brief letters)

Therefore, I recommend each patient be given adequate education as part of his therapy and that nutrition and diet education be provided by a person trained in dietetics. In order to guarantee that accurate information is provided, I also recommend certification or registration of health professionals statewide and nationally who provide nutrition and health information to the patient with diabetes.

There is an urgent need for legislation which indicates support for the nutrition education of patients with diabetes. This education should be carried out by the dietetic team consisting of a Registered Dietitian, Dietetic Technician and/or Dietetic Assistant. The 1964-65 report of the National Center for Health Statistics stated that dietitians were twice as successful in patient education as nurses or physicians. The Etzwiler report in 1973, "Educational Management of Patients with Diabetes" supported the previous findings. The White Paper: Patient Health Education from the Blue Cross Association, August 1974 addresses itself to the cost containment and improved quality of patient care resulting from patient education programs. Dietitians have the basic education and training to provide nutrition education and motivation for the patient with diabetes. Nutrition Education needs to be based on the individuality of the patient with diabetes.

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The diet history reveals food preferences, ethnic choices, budget limitations, preparation facilities available, lifestyle etc. to help establish a meal plan that is suitable. An accurate assessment of the educational level of the patient is paramount and realistic goals for education need to be established.

Only a small fraction of the education needed by a patient can take place in the hospital. Total education involves a series of follow-up visits after the disease is diagnosed and the patient is home. When patients are not adequately informed about their condition, many will rely on popular magazines and paperbacks often giving misleading information or providing guarantees to the patient who has no background to evaluate the validity of these sources.

Therefore, I recommend patients be provided with adequate literature written at their education level and informed of its availability. I encourage a dietetics team approach to provide nutrition information for the patient with diabetes. Use of the dietetic team will allow the dietitian more time to confer with other members of the health care team in establishing an education program to meet the individual needs of each patient.

I recommend an agency to provide factual educational programs and materials for the patient and educator. Keeping up with misinformation about food is a laborious task too time consuming and costly for each member of the health care team.

I recommend financial support for the team development of knowledge and skills of professionals for education of patients with diabetes. I would further urge financial support through centers of education.

Patients with diabetes need continuing education beyond the initial orientation and adaptation to the disease. Continuing education is very important in nutrition because life-styles change, caloric levels need to be adjusted, new foods need to be added to meal patterns. The cost for patient education often creates a financial hardship and follow-up visits are postponed or cancelled. The cost of keeping a patient out of the hospital through providing adequate education speaks for itself.

> Cost of patient seeing dietitian/nutritionist 9 times per year may approximate $100 which is equal to the cost of one day of hospitalization or, in some cases, 3 months of medication.

To offset the growing amounts of diabetes nutrition misinformation, patients need to be provided with adequate educational facilities and be a phone call away from a reliable source of information. An adequate number of dietetic team members are being trained to meet the needs of the 5 million patients with diabetes.

A prime example of the need for continuing education for the patient with diabetes will soon be with us. Professionals have been frantically awaiting the diabetic exchange list modifications with reservations and hesitations. Adaptation of each patient's diet to the new exchange lists will be necessary. Patients will need help adapting convenience foods and ethnic food choices to this new pattern. Just look at the hesitation, lack of understanding and misinformation circulating about the conversion to the U-100 insulin. There is a big task ahead for dietetic educators of the patient with diabetes. In order to encourage patients to come in for re-adjustment of his meal pattern, it must not be a financial burden for the family budget.

Therefore, I recommend nutrition services be included in the Health Maintenance Organization regulations for payment of nutrition services for in-patient, out-patient, home and preventive education programs.

Nutrition education and dietary management is the most important factor in a patient's day-to-day control of his disease. Long term nutrition care is important for an improved quality of living for patients with diabetes. Dietary modifications and understanding new concepts in eating make the need for individualized instruction very basic to the control of diabetes. My recommendations to the Commission are:

1. Provide for individualized nutrition instruction by a person trained in dietetics for each patient.

2. Certification or registration of professionals who provide nutrition information to patients with diabetes.

3. Development of patient education Materials written for different education level and ethnic backgrounds.

4. Agency to serve as a clearing house for educational programs and materials to aid in combatting misinformation as well as offer appropriate information to patients and professionals involved in diabetes education.

5. Use of team approach to patient education - dietetic team of registered dietitian, dietetic technician or dietetic assistant; and health care team of physician, nurse and dietitian.

6. Implement nutrition services through legislation in the ambulatory care programs such as has been accomplished in the new Health Maintenance organization regulations.

7. Financial support for the development of teaming therapy for the patient with diabetes.

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Testimony Presented to the
National Commission on Diabetes
by: Dr. Helen M. Wilks

THE DIABETIC CAMP EXPERIENCE

My name is Dr. Helen Wilks, former camp committee chairman with the American Diabetes Association, Greater Chicago & Northern Illinois Affiliate, Inc.

As we have been hearing most of the morning, one of the most valuable areas to the diabetic is education; education that helps the diabetic understand his condition and meet it positively.

For juvenile diabetics, one of the best vehicles for patient education is the camp experience. Camp gives the young diabetic his first chance to develop independence, make simple dietary decisions, learn to administer his own injections and be responsible for his own needs.

Many times we have seen overprotected children blossom in this atmosphere and face up to their diabetes for the first time. Equally noteworthy are the changes seen in the parents of these children when their second trip to camp rolls around - the parents have been relieved of some of the pressure they felt as a result of their children's rigid schedule.

The camp environment, with nutritionists, nurses, and physicians working together to provide total medical care and education, and a qualified camp staff to round out the experience with recreation and craft programs, gives the diabetic youngster the chance to grow in every way.

Many juvenile diabetics in Illinois have been extremely fortunate, because they've had camp available to them for nearly 30 years. But the camp can only accommodate 100 youngsters per summer, and with an estimate of 10,000 plus juvenile diabetics in Northern Illinois alone, this effort only scratches the surface.

If funds were available, we would expand camp to accommodate more children. In addition, since camp now is limited to children between the ages of 8 and 13, facilities for older diabetics are needed. The teen-ager, coping with the problems of diabetes and puberty, the young adult facing the job world and/or marriage, the families of diabetics, even senior citizens could profit from camp experiences, whether multi-week or weekend.

Further, ongoing studies of diabetes can be conducted in these camp environments. Following an 8-year-old through to his adult years in such a setting might give much-needed information about the onset of complications, degrees of control, etc.

We in Illinois are firmly committed to a total program such as this, and see it as a very positive way to meet the needs of the diabetic.

Testimony Presented to the
National Commission on Diabetes
by: Ms. Nike Bradley

My name is Nike S. Bradley. I am the Executive Director of the American Diabetes Association, Greater Chicago & Northern Illinois Affiliate, Inc.

The needs of the diabetic are many, as you have heard today, and the role of the American Diabetes Association, Greater Chicago & Northern Illinois Affiliate, Inc. has been to meet as many of those needs as possible.

In many cases, we've been overwhelmed by our successes, but we've been equally overwhelmed by our failures.

Our pluses include:

1. Reaching 60,000 diabetics with literature and programs in 1974, and nearly that number to date in 1975.

2. Better professional education with clinical symposia that now reach 1,600 professionals per year.

3. Our camping program - one of the finest in the nation.

4. A detection program, which last year saw 25,000 persons given free two hour post prandial tests with a 7% new diabetic diagnosis, and 40,000 tests already planned for this year.

5. Free nutritional counseling to individuals and groups and development of new recipes and nutritional aids.

6. Aiding hospitals in the establishment of diabetic patient education programs - nearly one-half (60) of the area hospitals are now covered and we played a significant role at 20 of them.

7. Participating in health fairs to reach another 100,000 members of the public about diabetes.

8. Developing volunteer groups throughout Northern Illinois to help diabetics through public and patient education, moral support and fund raising to help all of our programs continue.

9. Developing new materials for the patient good.

All this and more is being accomplished with a staff of nine professionals, but it still leaves many areas uncovered. For example:

1. Time and again you've heard from professionals and laymen about the need for more and better materials and the need for them to be available in many languages.

2. We have not even begun to reach the Spanish or Black communities in Chicago's inner city - and many other small ethnic groups deserve attention, too. Educational materials would help, but so would personal liaison within those communities; something we just haven't yet accomplished.

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3. Problems of discrimination in employment, insurance, drivers' licenses, etc., cross our desks weekly, but little progress has been made in arbitrating any of these areas. Legislation seems to be the most likely answer and will have to be initiated at a state level.

4. The paramedic population desparately needs updating on diabetes, especially insulin reactions and diabetic comas, so they can give prompt treatment whenever necessary. This includes firemen and policemen.

5. Although nurses and dietitians are devoting a great deal of time to diabetes, only about 10% have enough education about diabetes - which should be our job to accomplish via college level courses. Physicians, too, have largely inadequate information. Of the 12,000 in our area, only 200 carry professional membership in any diabetes association and only about 100 turn out for any clinical update meeting.

6. We have a need also to reach more senior citizens - whether they live at home or in nursing or retirement homes. Limited incomes play a factor here, as do lifelong habits and lifestyles and the entire health care team can help.

7. Finally, is the problem of those diabetics confined to correctional institutions where inadequate dietary and health provisions are the sad rule. We have drawn up a plan for diabetic patient education and care for one of our Illinois institutions; but follow-through by the state was totally lacking.

This is only a brief look at the problems we're attempting to meet. I would be happy to answer any questions from the Commission.

Chicago Dietetic Association
Founded in 1916

Testimony Presented to the
National Commission on Diabetes
by: Ms. Mary Abbott Hess
Assistant Prof. of Nutrition
Mundelein College

Testimony to
National Commission on Diabetes Hearing

Topic: Media Development to Meet Community Needs

Prepared By: Mary Abbott Hess, M.S., R.D.
President, Chicago Dietetic Association
Assistant Professor of Nutrition,
Mundelein College, Chicago

The Chicago Metropolitan area has grown in only 144 years from a wilderness with only a few thousand people to a metropolis of over seven million. Within the City of Chicago alone, the 1970 Census (published in August 1972) reported a population of 3,362,947. Of these, there are over one million Blacks and some 73 - 86 different ethnic groups comprise the current Chicago community.

The 1970's Census reports the numbers of foreign-born and first generation peoples and is included as an Appendix to this testimony.

Whereas, we used to speak of Chicago as a "Melting Pot" of cultures, we see sociologic evidence to the contrary as evidenced by the formation and maintenance of our many well known ethnic communitie In them, ethnic pride and traditions are cherished and passed from generation to generation. Communities such as Andersonville, Chinatown, certain areas of Lincoln, Lawrence and Milwaukee Avenues, West Rogers Park, and others, each have unique ethnic identities. An important component of this ethnic pride and identification is the adherence to traditions reflected in food selection and preparation. Thus the

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"Melting Pot" has evolved into a "salad bowl" of diverse ingredients (people) retaining their unique character and languages.

The "Melting Pot" assumed common goals and educational processes. The"salad bowl" does not. For nutrition educators, it poses a plethora of dilemmas. Currently available media and materials for the nutritional management of the individual with diabetes are generally geared to middle-class whites with a high school education, good reading comprehension who speak English and prefer plain all-American fare.

Obviously, many in our diverse urban population do not meet these criteria. Some pharmaceutical companies have provided translations of the well known Exchange System. Although this is a step in the right direction, it is woefully inadequate. Why? First of all, the materials are merely translations of foods often not popular in a particular culture while neglecting to include foods crucial to that culture. For example, the Japanese or Chinese is not told how bean sprouts, soy sauce, bean curd cake, bok foy and other very common foods to their cultures may be included in their meal plan.

Because of current economic pressures, even the available translations are in short supply.

Many ethnic groups need basic, less technical educational materials in regard to the diabetic diet as well as other facets of diabetes management and care.

Materials are needed to appeal to those who learn in different ways. It is not only a matter of language but also the message itself that requires media adaptation.

Doctors John Ginther and Richard Jones have done extensive research at the University of Chicago Hospitals and Clinics as to how people learn. They found clear evidence that some people attain nutrition and health information most readily if it is presented in words, others by images and yet others by action techniques. Thus, media must be designed to appeal to the ear, the eye and the senses.

Booklets, even when accompanied by oral comment, are not enough. Attractive, exciting visual images such as slide presentations, videotapes, films, posters, food samples, measuring equipment, etc. are important learning tools. Needs of the visually handicapped are often neglected. Where are the basic materials in large print?

Audio methods exceed the ever popular lecture. Short taped presentations could be developed for use on the radio, for various medical settings or even for home use. The blind diabetic can benefit greatly from audio instruction. Discussion groups are useful to many who benefit from the support of other diabetics and can participate in mutual problem solving. Simulation games are becoming a popular teaching-learning tool.

Magazine articles and particularly television could improve public awareness of diabetes in both detection and care. More openness would help to alleviate the commonly felt stigma of being a diabetic. A TV program which portrayed a successful individual who "happened to be a diabetic" would be a dream come true!

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In the planning meeting prior to developing these comments, it was learned that Minnesota had developed 26 one-half hour shows per year so that the average home would know more about diabetes. But it was also reported that here, in Chicago, many diabetics are reluctant to admit their condition or to seek help from existing agencies. The first step in any effective diabetic teaching is the acknowledgment of the condition.

One method of creating a more positive attitude towards diabetics is to work through the schools. Diabetic children are often feared and meet hostility as a result. Teachers must be educated as to diabetes, particularly juvenile diabetes. Through inservice education programs, teacher training institutes and other methods, teachers should become more comfortable with, and less threatened by, diabetic children in the classroom. The establishment of a positive attitude toward the diabetic child will surely influence his peer relationships and improve the child's emotional and social development.

Curriculum guides and visual aids appropriate to a variety of age levels, should be available to teachers for classroom use. Diabetes education could be a component of health or physical education. School nurses are particularly anxious for information as reflected in a letter toADAGCNIA of July 16th in which a school nurse from a suburban school said "I am in the process of setting up a school health program and would appreciate your forwarding to me catalogues, pamphlets or posters for students in K through 8 classes." This is a familiar request. From June 1974 - May 1975, the American Dietetic Association processed 600 requests for information on diabetes.

Camps for diabetic youngsters and discussion groups for juvenile diabetics will be discussed by others but they certainly are vital and often successful learning experiences.

All diabetic educators are aware that "Meal Planning with Exchange Lists" which was first published in 1950 is a key tool in dietary management. We also know that it is immensely popular --- the American Dietetic Association sells some 20,000 copies per year at 50¢ per copy plus it is reprinted in many sources. Later this year, a major revision of this booklet is expected. As a registered dietitian and nutrition educator, I am tremendously concerned about the massive re-education that will be necessitated. The revision will raise questions from those with good dietary control as to the correctness of their previous diet system. All of the health care team will be in need of orientation to the changes. Virtually all existing nutrition related materials will simultaneously become dated. It is my hope that the Commission will consider plans for implementing an orderly transition of the dietary component of diabetes education.

It seems clear that the traditional methods of educating the diabetic as to his own care have not been as successful as desired. Often the appropriate person, with the optimal media has not been present at the "teachable moment". All too many diabetics have received their diagnosis immediately followed by diet, medication and hygiene information. They have left a hospital situation both frightened and confused. Community resources have been limited and emotional needs have not been considered.

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It seems a propitious time for these hearings and the implementation of the National Diabetes Mellitus Research and Education Act.

The needs are great and the challenge of providing improved diabetic education is one that must be shared by all members of the health care team.

Questions are welcomed.

Testimony Presented to the
National Commission on Diabetes
by: Mr. Bernard Malm

My name is Bernard Malm. I'm Chairman of the Board of DeSoto, Inc., a diversified manufacturing company with annual sales of about $250,000,000 and employees numbering about 6,000.

I became a diabetic in 1942 at the age of 31 - I'm now 64, so I've had diabetes for 33 years. I've always been considered a severe diabetic but have been under good control. When I was diagnosed a diabetic, I was working as an Assistant Buyer for Sears and had been with them 3 years. I immediately announced to Sears that I was a diabetic and on insulin. Fortunately for me, Sears had no preconceived notions nor any history on which to base a judgment on diabetics. We both adopted a "wait and see" attitude. For several years I felt Sears was overly protective of me, but as I was learning to cope with my condition, Sears was learning that I could assume greater responsibilities. I believe that I have demonstrated that pressure jobs can be handled by a diabetic. My responsibilities required travel, entertainment and long hours.

It is extremely important that the diabetic know himself and never hide the fact that he has diabetes. When on a visit to one of our plant locations, the management group there follows my schedule. When we entertain, we set the hours with complete understanding of our guests. Since I 'blazed the trail" at Sears, they are not concerned that diabetics are greater than normal risks nor incapable of advancement. Certainly in the DeSoto organization we make sure that there is no stigma attached to being a diabetic.

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I have been greatly impressed with the Diabetic Association's program to screen and identify diabetics. I believe it is equally important to properly indoctrinate diabetics in the physical as well as mental adjustment to insure a normal existence. Much has been written on the subject from a medical standpoint. This is important, but the psychological approach is also important. The ideal situation would be a face-to-face confrontation with someone who "has been there." Equally important is the need to indoctrinate the business establishment to recognize diabetics and to provide opportunities for employment.

Much of what is commonly thought to be known of diabetes is the result of hearsay. Some is the result of publicizing physical problems which arise due to neglect of one's care. Unfortunately, this is the picture of diabetes that is formed by many corporations. No wonder some of them don't want to take a chance on a diabetic. They envision greater than normal time off for illness, partial or total disability because of problems with vision, circulation, etc. As any executive can tell you, we in business don't need more of that – our insurance is already high enough. Lost time and partial or total disability can be very costly.

There are undoubtedly some individuals who are unable to function normally because of their lack of diabetic control. This should not eliminate all diabetics from consideration, however. A well organized campaign to tell the true story of diabetes and the diabetic worker should be launched. This could be done by aiming releases to the business executive through newspaper and magazine articles which could be placed as a "public interest" release.

Also, through such media as the journals of the U. S. Chamber of Commerce, the Conference Board, National Association of Manufacturers and various trade organizations, good human interest stories could be generated. A volunteer organization of diabetics could be recruited to call on major corporations to talk to chief executives and their personnel departments. A story can be told of the good attributes of a diabetic employee. He is careful of his health; he doesn't overeat; if he drinks at all, it is in moderation. He keeps his weight down; he gets plenty of rest and keeps regular hours. Equating this with a "normal" person who may be over-weight, drinks too much, doesn't get enough rest, is prone to heart attacks, etc., etc., I wonder if the diabetic may not come off pretty well.

By properly focusing attention on these issues, by opening up job opportunities and giving the diabetic a will to live and a will to work, the mental health and, therefore, the physical health of the diabetic will be greatly improved.

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Testimony Presented to the
National Commission on Diabetes
by: Mr. Robert Reisman

My name is Bob Reisman - I am twenty nine years old. I became a diabetic at the age of thirteen. Most of these diabetic years, diabetes has been an annoying inconveniece, and embarrassing moments, or an occassional headache. As the years passed, however, there was a persistant feeling that my candle was burning at both ends. Statistical information about diabetes and minor circulatory damage that made healing from cuts a problem, gave me an edgy awareness.that my health was less than optimally controlled.

The use of insulin for maintaining a diabetic is far from ideal. It presents many immediate problems from hypoglycimic reactions to abcesses at the injection site. As a drug for controlling and maintaining blood sugar levels it is effective only with the most strictly regimental and timed diet. While this is theoretically and mechanically feasible, it is humanly impossible.

Many diabetics, I have observed, tend to seek employment in the public health field as nurses and hospital administrators and so forth in, it seems to me, a conscientious effort to attend to their condition. Never-the-less, after fifteen or twenty or even twanty five years, they, like the rest of us diabetics, show the long term effects of being diabetic. Retinopathy, which suddently left me legally blind a year and a half ago, Nephropathy - whereby my kidney functioning is progressively deteriorating and will require a kidney transplantation for me to survive; and many other complications of which I am sure you are aware.

My point is that money spent on education of doctor and / or patient is to a degree misspent. It is misspent because we do not yet have enough knowledge to disseminate to even minutely diminish the ill effects of diabetes other than to tell the public to watch their diet and hope for the best. What we need to spend our money on is <u>research for a cure</u>.for diabetes so that diabetics don't lose their eyesight and have to accept social security payment, rather than contributing to the fund as is true in my instance. We need a cure because a diabetic kidney problem would cease and spare an expensive, not to mention serious transplantation operation. A cure or an arresting mechanism for the serious complications of diabetes, neither of which we are currently ambitiously pursuing would alleviate if not eliminate the four and one half billion dollars now lost annually due to diabetes diseases. And this figure is bound to increase exponentially as diabetes itself is becoming increasingly common.

In a recent letter received from the Public Health Service - National Institutes of Health, the statement was made "that more dollars in any number, do not necessarily provide decisive advances in our knowledge of diabetes or improvement in diabetes care and treatment, it is the excellence of research program and level of quality of the physicians and scientists engaged in diabetes."

There are many qualified and experienced -researchers with worth-while projects that are not being funded. Juvenile Diabetes Foundation, a new national organization has not yet been able to provide even seed money for more than a fraction of the research projects it has deemed worthy of support.

That is why I am here today to solicit your support. Iam still a young man who would like to marry and raise a family but those things are problematical to someone with a time bomb ticking and no one to dismantle it. My generation of diabetics want to be viable, hard working creative and contributing human beings.

Perhaps with your help, we will be!

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Testimony Presented to the
National Commission on Diabetes
by: Mr. Ronald Winchester

My name is Ron Winchester. I am presently 28 years old and have been diabetic since the age of 3. I was living a relatively normal life, graduated from college, was progressing in a career and looking forward to marriage and a family of my own when these hopes and dreams were shattered with the complications of Diabetes which struck at the age of 24. At that time I experienced Diabetic Retinopathy. Eventhough I under went lasar treatments, the eye damage progressed and within 6 months I was declared legally blind. One year later kidney failure became evident and in March 1973 I under went a successful cadaver kidney transplant (having my own kidneys removed 7 months later). So, in spite of relatively good control all my life, I now survive with 2 insulin injections and an assortment of 34 pills every day.

I would like to be able to tell you my situation is unusual for a diabetic but this is simply not the case. I quote from The Wall Street Journal,

> "Nearly all diabetics eventually develop degenerative complications resulting from premature hardening of the arteries and deterioration of the body's tiny, fragile blood vessels, particularly in the eyes, nerves and kidneys. Diabetes has just become the country's leading cause of new cases of blindness. The vascular complications shorten the average diabetic's life by one-third; a child is lucky to live 25 or 30 years after the onset of the disease."

This past week I reached the 25 year mark with Diabetes. I am told in this article that I am not to have a happy 28 birthday, rather a lucky 28 birthday. Indeed that I am lucky to be alive. The reality exists that my chances of seeing my 29 birthday are even slimmer. I ask you, what possible future do I have to look forward to? The kidney transplant has not cured the Diabetes but merely prolonged my life. I have already been told by doctors that Diabetes will eventually deteriorate the transplanted kidney as it did my own. I now face further progressive complications such as further eye damage and possible total blindness, destruction of the nerves and a more rapid rate of Arteriosclerosis with eventual stroke or heart disease.

There is talk today about money for Diabetes detection and education. Detection and education will not stop Diabetes. Detection and education will not stop the heart problems associated with Diabetes. Neither will it stop Cerebrovascular disease, Arteriosclerosis, or Nephritis and Nephrosis. The only way to end these problems is to find a cure through research. I will go a step further by saying that research dollars will make detection and education obsolete.

Ladies and gentlemen, I represent the new generation. Our entire hope for the future rests in our children. We want our children to have a better and more fulfilling life. I'm sorry, but I cannot possibly marry and take the risk of raising diabetic children and give them the very same dismal hopes that have been promised to me by your generation. More disturbing is that these are the same facts that were handed to you and indeed the same facts that were handed to your parents. The truth remains that the

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same facts have been passed along for over 50 years. How much longer will the answers for a cure remain stagnant? The responsibility for finding a cure rests with us!

Respectfully submitted,

W. Ronald Winchester

W. Ronald Winchester

WRW/g

August 4, 1975

Testimony Presented to the
National Commission on Diabetes
by: Dr. Fred W. Whitehouse
Henry Ford Hospital

Subject: Central Information Library

..r. Chairman, members of the National Commission on Diabetes:

My name is Fred Whitehouse. I'm a practicing physician at the Henry Ford Hospital in Detroit, Michigan, and a member of the American Diabetes Association. For the last three years I have been Chairman of the Committee on Information for Diabetics of the ADA. The comments I wish to make this morning relate to one activity of this Committee and to recommendations made by it to the Board of Directors of the American Diabetes Association. However, I think the Commission should view these remarks also as personal opinion and recognize that the subject to be presented does not necessarily represent an activity peculiar to the American Diabetes Association but rather an activity necessary to aid diabetics throughout the United States. I want to speak about a Central Information Library for the iabetic.

Diabetes, a chronic disease without cure, requires much patient cooperation to reach optimal goals of treatment. To achieve patient cooperation demands that the patient understand the reasons for treatment, the goals of treatment, and the technical details of daily care. Attempts to do this have been clustered under the umbrella of patient education. Though diabetologists have understood the importance of patient education for years, only recently has patient education become a well-documented need and attracted appropriate interest and activity throughout medical circles. The greatest interest still emanates from those people who have the responsibility for a large number of diabetics and who must respond with innovative techniques for teaching these diabetics. This responsibility has fostered a large variety of approaches to the education of the diabetic with modifications depending upon: (1) the personality of the health professionals involved; (2) their own personal opinion and bias regarding the

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management of diabetes; (3) the nature of the population of diabetics that they advise (age, sex, ethnic background, occupation, educational achievement, economic status, etc.); and (4) the nature of the advice regarding teaching materials that these health professionals have received.

Educational materials have been developed by many groups as diabetes clinics, pharmaceutical houses, the ADA and its affiliates, Regional Medical Programs active in diabetes, municipal hospitals, medical schools, private houspitals, etc. Perhaps the only common ground has been the disease, a certain standard of professional advice, and a desire to aid the diabetic.

Lately the American Diabetes Association has recognized that the number and scope of its own materials related to patient education is grossly inadequate and needs updating. For this reason, the Committee on Information for Diabetics reviewed these particular areas and has become active (1) in updating current material; (2) in developing necessary material for young diabetics; and (3) in recognizing that before developing other materials for education of the diabetic, one must identify and review extant materials to avoid the tautologous use of money and time.

The Committee attempted to identify central sources of information which might catalogue what educational material exists for the diabetic. We found an easy access to professional materials on diabetes but nothing for the patient with diabetes. We looked at the National Library of Medicine, the American Medical Association, the American Hospital Association, the American Diabetes Association itself, the Audio-Visual Center in Atlanta regarding educational materials for the patient. These areas carried only sketchy references on information related to diabetes for the diabetic or his family. A fine bibliography had been developed by members of the Diabetes Association of Greater Cleveland and is currently available, yet this appears to be a one-time effort and as such this book will quickly become outdated because of newer educational materials being developed.

Because no Central Information Library existed, the Committee on Information did recommend to the Board of Directors of the ADA that one be created which would collect, collate, review, and disseminate the various educational materials available for the diabetic. The Board has approved this recommendation in principle. This approval will be activated whenever appropriate monies are available. Currently no funds exist. Attached are our Committee's guidelines for this library.

Let me summarize the essence of the problem. There are many diabetics in the United States. There are a sizeable number of health professionals caring for these diabetics. All of these diabetics need information. Most diabetics are treated by health professionals who do not develop their own material. These health professionals request material and aid in patient education for their diabetics. Some place should exist where these health professionals can obtain high quality information which is screened, reviewed, kept up-to-date, and which can be made available to them and to their patients so that appropriate patient education in diabetes can be optimally achieved wherever the diabetic may live and whoever he may be.

I know that members of the National Commission recognize that patient education is a vital part of the care of the diabetic and that educational materials, either written or audio-visual, need to be made available to diabetics everywhere. In order to minimize a costly and time-consuming duplication of effort, some type of a Central Information Library would aid in disseminating this information throughout the United States. Something of this nature is what is needed and it is about this need that I speak this morning. Thank you for your attention.

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GENERAL GUIDELINES
for
THE CENTRAL INFORMATION LIBRARY

1. Located at American Diabetes Association office -- New York City.

2. Directed by a medical librarian.

3. Source of information on diabetes for patients and families.
   (a) What material available (books, pamphlets, audiovisual, etc.)
   (b) How to get the materials (source and cost)
   (c) Nature of material --
   quality, aims of and brief editorial note describing the material.
   (d) Opinion on appropriateness of material; is the material current? etc.

4. Information library oriented to service to people with diabetes, their families and to those who wish to serve the diabetic.

5. Public information and professional information is not the primary reason for the library.

6. Make service known to all interested -- affiliates and otherwise.

7. Space permitting -- keep examples of material available; however, not a lending library.

8. The informational material could be (1) audiovisual slides, tapes, movies, etc.; (2) written material -- books, pamphlets, etc.

9. The Library's existence, through cataloguing and examining extant material, may diminish excessive publication of information material which would conserve funds.

Approved by
Committee on Information for Diabetics
January 29, 1975

A RESOLUTION SUPPORTING RESEARCH IN DIABETES MELLITUS

Testimony Presented to the
National Commission on Diabetes
by: Association of American
Indian Physicians

WHEREAS, collaborative research programs in the area of diabetes mellitus have provided much new and useful data relating to diabetes, and

WHEREAS, diabetes mellitus is a major health problem of most, if not all, American Indian groups, and

WHEREAS, more data needs to be collected in this area;

NOW, THEREFORE, BE IT RESOLVED, That the Association of American Indian Physicians hereby request the National Commission on Diabetes to give a high priority to continued support for collaborative and other research related to diabetes mellitus, especially as it relates to American Indians and Alaskan Natives.

CERTIFICATION

This resolution thoroughly discussed and adopted at a duly called annual meeting of the Association of American Indian Physicians in Green Bay, Wisconsin, this day, Friday, July 18, 1975.

Signed: _____
President, AAIP

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Testimony Presented to the
National Commission on Diabetes
by: Ms. Linda Crouse

National Commission on Diabetes
Mr. Victor Wartofsky, Information Officer, NIAMDD
National Institutes of Health
Room 9A04, Building 31
Bethesda, Maryland 20014

Dear Mr. Wartofsky,

I received your name and an explanation of the purpose of the National Commission on Diabetes from John Nowak, an active member of the Champaign County Diabetes Association. I am writing to give the viewpoint of the diabetic living in a rural community and to make several recommendations, which I hope the Commission will seriously consider.

I am an eighteen-year-old diabetic with onset of the condition at the age of three years. I am of an upper, middle-class family and have lived in both urban and rural areas. Having spent the past seven years in a small, farming town, I have become well acquainted with the situation that the diabetic encounters in such a locale, and hope that by speaking out the circumstances can be changed.

Recent experiences have prompted my efforts. Photocoagulation, hypophysectomey, and frequent trips to St. Louis caused plans to attend the University of Illinois at Champaign to be postponed. Originally a career in psychology was my goal; however, the past year and a half has made me realize the desperate need to educate the public as to the ever increasing problem of diabetes. Consequently, I am now enrolled in the Community Health and Safety Program at the University of Illinois for the 1975-76 year.

Following are some of the observations I have made and encountered personally. I am sure none of my statements are unique to the small-town individual with diabetes, but I feel they should be emphasized.

Monticello is a small, farming town, located about twenty-five miles from Champaign-Urbana, where most of the local educational opportunities exist for the diabetic. For its size, Monticello is endowed with a large number of diabetics, including six known juvenile and numerous adult-onset diabetics. Several reasons and a few excuses exist which prevent most from seeking help. A few of these are: there are farming duties to be attended to; some don't drive or do not drive at night; economic problems exist; some do not feel the fifty mile trip is worth the time; and, speaking from experience, fear produces all sorts of excuses. From the child's standpoint, adults have to be depended upon to provide for their needs. If parents are overprotective, feeling guilty, not capable or not interested in understanding the situation, or there is a lack of money, time, and/or transportation, the child living in the rural community may feel trapped by his situation. Young people need help to understand their situation, and the young diabetic, especially if he knows no other diabetic youths, soon encounters the feeling that there is no one that understands and there is no hope. Loss of motivation brings regrets, rebellion, and oftentimes a bill for society to pay.

Socially speaking, I have found that for the adult with diabetes there is not much of an impact. However, depending on the attitude of the juvenile diabetic and the knowledge of those around him, this is not always true for the young diabetic. Misconceptions and ignorance can produce vicious circles. For the most part, the older diabetic has lived his life and learned to cope with changes. On the other hand, there are those who figure they are getting old anyway and

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continue to act as if the condition never existed. Eventually they become the "burdens to society" or leave their families with sorrows.

Society places an extreme emphasis upon eating and drinking, and an amazing number of people take offense if food and drink are refused. If the diabetic, especially the child, does not learn to stand up for himself, the consequences can be a rather nil social life or loss of control from ignoring the rules of diabetes. The small town often provides no other form of activity for young people, and for the diabetic that wants to be a part of his peer group but is rejected because his situation is not understood and he is "different" this may lead to feelings of inadequacy. Overprotective parents may keep diabetic children from participating in events with peer groups because they fear the possibilities of something going wrong. Some parents try to encourage association only with older children and adults in the hopes that the diabetic will be looked after. As a result the diabetic youth does not learn to take care of himself, becomes dependent, loses hope, and surrenders to the apparently hopeless situation.

Economically, diabetes can be an added burden for the diabetic. Costs of supplies, instruction, hospital and doctor's bills, and transportation for the diabetic who desires good control and close medical supervision, run high, and are often the reason that the diabetic does not seek help. Insurance companies are now feeling generous in their offerings of coverage for the diabetic, but if the diabetic is of fifteen years duration or more and has any complications, how are the increased premiums to be paid? One solution is to sacrifice proper food and supplies; this works for some, but for most it ends up in complications that require more hospitalization, unemployment and disability compensation, etc.,

than the policy offers, which in turn may end up in emotional upset. If the money is available, the situation can be managed; if not, life looks difficult, and more emotional stress contributes to instability of the diabetes.

Familywise, if there is more than one child, sibling rivalry may present problems and throw the situation out of control. Nondiabetic children may resent any added attention toward the diabetic child, and the diabetic may feel he is not receiving enough attention. Parents may feel guilty about "giving the child diabetes" and become overprotective. The diabetic child may resent the parent "giving him diabetes," and the whole situation worsens with the misunderstanding. If religion enters the picture, as is so often the case, the feeling that the individual is being punished may develop. In small towns a great importance is placed on "what the neighbors will think." If the diabetic, whether young or old, places much importance in this, psychological problems may develop.

Psychologically, the diabetic is often ignored. The psychological state of the diabetic is the most important aspect of diabetes. Speaking from experience, the attitude that the diabetic has about his condition can enhance or destroy his life. If not considered or taken seriously when determining the plan of treatment, the result may be mismanagement. Diabetes when it is not understood, provides the diabetic with an "excuse" to protect him from undesirable situations. It may become a crutch or a power, which the diabetic, especially the young person, can use to manipulate those around him. Life with this attitude is unhappy and not very productive, with regrets eventually being paid. The diabetic who speaks and is not heard and feels that the world is apathetic toward him may lose hope and in turn along come the rest of the problems.

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Now, I would like to offer some suggestions as to how the situation can possibly be improved.

Most small-town doctors are overworked as it is and do not have time to keep up to date on all the new data being released concerning diabetes. In addition there is not enough time and money to adequately explain all the questions and misconceptions that we all have. In my attempts to gather information, I have encountered many individuals, young, old, and in-between, who are frightened, confused, or apathetic about their condition because they do not know where or how to obtain and/or interpret information. I have undertaken the project of submitting articles to our local paper, issued weekly, concerning diabetes, its various aspects of treatment, misconceptions, helpful hints, etc., in the hopes of answering some of the questions. Unfortunately, not all papers are so cooperative with such efforts. Here, I would like to suggest to the Commission that they request the ADA, AMA, AHA, or FDA to send out weekly, or even more frequent, articles to all papers and make a nationwide effort to have newspapers do their job and contribute to the interests of the public. This is not idealistic and it does not turn a paper into a medical journal as some are inclined to think. I have received many comments from diabetics, nondiabetics, people in medically related fields, etc. concerning the helpfulness of putting information where it is readily available in the newspaper.

During Juvenile Diabetes Month in May, I distributed booklets and pamphlets obtained from the Carle Clinic patient education department in Urbana to our local library, hospital, and pharmacy. The material was left where it was readily available for the taking; people are more willing to seek information when they can do so without being encountered, especially when they are self-conscious about

being diabetic. The results of such an effort were very favorable, and I hope to keep a table stocked at the hospital for those who desire copies. I suggest to the Commission that, possibly, public libraries and hospitals be encouraged to supply, or be supplied with recent books, periodicals, and other publications concerning diabetes. Lists of publications are available from the ADA, but unless they are sent to the appropriate sources, they are not often sought.

Concerning the situation of the diabetic and school, I recommend that at least one inservice meeting be designated for the purpose of informing the teachers as to a few of the aspects of diabetes. An intern or patient education nurse could be asked to speak about the health problems of students, including diabetes. Oftentimes there may be only one diabetic student in a school, but this is no excuse for ignorance. Teachers are usually socially active, they may have diabetes in their own families, and they can encourage diabetics to participate in educational workshops, etc..

Once the information is obtained, comes the problem of applying it. Young doctors for the most part do not find small-town practice attractive. Therefore, unless the diabetic has the means and can afford expenses, he is forced to rely on the guidance of the physician whose medical training in the area of diabetes may be outdated or not completely updated. Time does not permit the thorough instruction that is needed. The newly diagnosed diabetic is oftentimes so distraught by the diagnosis that he cannot fully comprehend the initial instruction and therefore, often misinterprets what has been said, or hears only what he wants to hear. This may result in either feeling the condition is "not that bad" or, especially in the case of the child and over protective parents, inflicting unnecessary restrictions upon the diabetic. People who have lived in a rural area all of their lives and developed a deep, almost reverent, trust in their family doctors are not often willing to accept facts contrary to those of their physician.

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To promote small-town practice, contribute to public education concerning diabetes, and help keep people informed on the latest data, I offer this possibility: medical students at some point in their education (most likely Junior or Senior year of medical school) could be required or given the opportunity to go into a rural community for a few days and hold a patient education session at a public meeting place. Schools are equipped to hold an audience and, hopefully, require no rent. Students could live with the doctors and become acquainted with small-town practice, while at the same time briefing the physicians as to what is happening in research, etc.. Students would, of course, have to be knowledgeable about the basics of diabetes; they would be put in touch with all socio-economic levels of people and learn the diabetics psychological and physical needs on a personal level. Such a situation would provide the opportunity for the medical student to develop speaking skills and the ability to respond to questioning, too.

If transportation could be provided to worksheps and meetings, a much greater response would be achieved. People are more willing to attend such affairs as a group, and a school bus could be utilized for this purpose. As yet, I have not checked into such provisions locally. I realize that resistance will undoubtedly be encountered. If the ADA or AMA made a national request for cooperation, perhaps some favorable responses would be received.

Lastly, I present what I have been told is a very idealistic suggestion. However, I do not feel this idea could not be made a reality. In an outline obtained from Helbrooke S. Seltzer, M.D. on "THE OTHER FIVE MILLION" he states, "Diabetes was officially ranked as 6th most common cause of death in 1972 (39,000 deaths): but actually it is either the 1st or 2nd most common cause of death,

because it produces 2/3 of all hardening of the arteries...which in turn causes 48% of our 2,000,000 deaths in the U.S. each year." The connection between heart and vascular disease and diabetes is well-known. Therefore, since the American Heart Association and the American Diabetes Association have such a common interest, could some kind of a cooperative program between the two organizations be formed? True, the AHA has worked long and hard to achieve its status, whereas the ADA is a fairly new organization. But, if the AHA is the dedicated voluntary organization it was established to be, and with the diabetic "customers" that they are serving, the idea that part of the AHA's funds be shared with the ADA in an effort to develop research cooperation is not so idealistic. If the program could be initiated, a possible title could be the American Diabetic's Heart Association. I sincerely hope this idea and my other suggestions will contribute to the cause.

In closing, I would like to extend my thanks to the Commission for taking on the task that has been assigned to them. In my attempts to help diabetics and those associated with us to learn the facts about diabetes, I have encountered a fraction of the resistance and difficulties that are faced, but with motivation, thought, and action nothing is impossible.

I will be anxious to know the results of these public hearings, and I speak for more than myself in saying the efforts of the Commission are greatly appreciated.

Thank you for this opportunity, your time, and consideration.

Sincerely,

Linda Crouse

Linda Crouse

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Testimony Presented to the
National Commission on Diabetes
by: Mr. Ernest M. Frost
Vice President
American Diabetes Assoc.,Inc.

STATEMENT
BY
ERNEST M. FROST, Ed.D.
EXECUTIVE VICE PRESIDENT
AMERICAN DIABETES ASSOCIATION, INC.

As the Commission concludes its public hearings and begins to prepare its report, I think it might be appropriate to present for your consideration a view of the voluntary health agencies and their relationship with the Federal government in combating a disease area. The phenomenon of voluntary health agencies is unique in the annals of medical history and the growth and stimulation of concern by the American people in various medical problems to no small degree has been due to the efforts of the voluntary health agencies in alerting the American people to problems of health.

Since 1946, first as a volunteer and since 1950 as a professional in the voluntary health field, I have been privileged to have witnessed and participated in the growth of this uniquely American endeavor. In association with two major organizations, the National Foundation - March of Dimes and the American Heart Association, prior to my present assignment as Executive Vice President of the American Diabetes Association, I have witnessed many changes in America's attitude toward health.

I believe the voluntary health agencies that presently exist in our country have played a most important role in improving the welfare and the health of the American people. I would like to briefly cite some specific accomplishments that have been brought about through the dedication of

millions of Americans who have chosen to participate in the activities of our voluntary health agencies.

The phenomenal growth of these agencies has taken place for most part since the end of World War II. Certainly, one of the success stories that is so important to all of us is the story of the National Foundation - March of Dimes and its battle against poliomyelitis. I remember only too well the statement made at a medical seminar in 1948 by one of our outstanding scientists that he hoped by the end of the 20th century we would have the answer to poliomyelitis. Six years later the answer came through the efforts of the National Foundation - March of Dimes and its research programs. I believe all who were connected with that enterprise would readily admit that the American people stimulated the research efforts not only through their financial contributions but by making their concern widely felt across this land. I might point out that this was accomplished without Federal funding.

Since 1949 the American Heart Association has invested over $230 million in research programs in cardiology. These programs have permitted many of our scientists to go down many avenues of research constantly attempting to find answers. The stimulation of the American Heart Association, I am sure, influenced our Federal government to make additional appropriations through the Heart and Lung Institute to such a degree that today this Institute's budget represents a major health expenditure on the part of our government. One can not examine the American Heart program without pointing to a most significant area of expenditure: the Career Investigator Program of this organization which has served as a model for many other leading health agencies.

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For example, the American Diabetes Association in 1975 granted its first two career investigator awards.

Voluntary health organizations have been involved in total programming. For example, in the field of professional education, the National Foundation - March of Dimes prior to the development of the vaccine against polio expended huge sums of money in the training of professional personnel. Specifically, up until 1955 it has been estimated that some 60 per cent of the physical therapists in the United States were trained by March of Dimes funds.

In the area of public education, again we find a wonderful illustration of how a voluntary health agency can assume leadership. The American Lung Association, formerly the National Tuberculosis Society, in conjunction with American Heart and the American Cancer Society conducted an all-out program to educate the public regarding the dangers of cigarette smoking. These three voluntary agencies were instrumental in having our Congress pass a law which prohibits cigarette commercials on television, and the same law put the warning on packages and advertisements.

As the needs developed -- be they for trained health personnel, mechanical equipment, or new areas in research -- the voluntary agencies put their resources and sensitivity to public need into the battle against specific diseases. The American Cancer Society in the early sixties put a great deal of its research efforts into virus studies at a time when the Federal decision was to fund other areas. Developments in the virus area in turn amended the National Institutes of Health's thrust toward more such research commitments. The ability of the voluntary health agencies to take initiative, to make long term commitments and to institute pilot programs gives a special role to these voluntary groups.

Finally, in the area of preventative medicine, the work of the American Cancer Society has been outstanding. As I as sure you are aware, they have embarked upon a program that hopefully will enable all women by the end of 1976 to have the Pap test. This certainly will influence the preventative medicine aspects of a voluntary health agency.

Ladies and gentlemen of the Commission, what I have tried to present here are examples of voluntary health agencies working with the Federal government with the common aim of improving the health of our people. The battle against disease, and most particularly diabetes, is too big a battle to be fought either by the government alone or the voluntary health agencies alone. It requires involvement by all people at all levels of our society working together. I urge this Commission to consider carefully the total programs of these agencies in preparing your final recommendations to Congress. On behalf of the American Diabetes Association, I pledge to you our complete cooperation in carrying out the mission of Public Law 93-354.

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Testimony Presented to the
National Commission on Diabetes
by: Mr. Dennis R. Garrett

7711 West 100th Street
Overland Park, Kansas 66212
July 25, 1975

Mr. Victor Wartofsky
Information Officer, NIAMDD
National Institute of Health
Room 9A04, Building 31
Bethesda, Maryland 20014

Re: Public hearing - Chicago August 4 - 5, 1975

Dear Sir:

As parents of a 16 year old son who has been a diabetic for 13 years, we would like to go on record as favoring funds being allocated and priority given toward two major goals:

1) Research to find cause and subsequent cure of diabetes.

2) A public education and information program concerning diabetic problems - insulin reactions, need for meals on schedule, discrimination etc.

Thank you.

Sincerely,

Mr. & Mrs. Dennis Garrett

Mr. & Mrs. Dennis R. Garrett

Testimony Presented to the
National Commission on Diabetes
by: Dr. E. A. Haunz
Secretary-Treasurer
American Diabetes Association
North Dakota Affiliate, Inc.

American Diabetes Association
NORTH DAKOTA AFFILIATE, INC.

Box 1115 Grand Forks, North Dakota 58201 Telephone: (701) 775-8121

July 24, 1975

THE NATIONAL DIABETES COMMISSION

Having conducted a restricted practice with some 3,500 diabetic patients over the past twenty-eight years together with teaching responsibilities in the Medical School of the University of North Dakota, I feel an urgent sense of responsibility to inform the Commission of the need for upgrading programs of research, education, and clinical management in the field of diabetes throughout the area served by this institution. While some improvement has occurred in the area of research training centers and clinical postgraduate education in the field of diabetes throughout this region, there still exists totally unacceptable standards which demand decided improvement in quality. To mention but one facet of this problem, it has been my privilege to participate in postgraduate education throughout this region over the past several years, and this constantly reaffirms the fact that serious deficiencies continue to exist. This can only be solved by generous funding of the magnitude submitted by the University of North Dakota School of Medicine, Department of Medicine, which accompanies this letter of support. It is my sincere conviction that these deficits are at least as great as you will find existing in any of the other areas of the country at the present time. The fact should be underscored that we are talking about a regional population of approximately one million persons who will benefit from such funding.

After careful review of our potential capabilities to implement these programs, if you approve adequate funding, I am thoroughly convinced that the University of North Dakota School of Medicine in concert with the American Diabetes Association, North Dakota Affiliate, Inc., its constituent physician members, and other allied medical personnel groups throughout the State of North Dakota could implement such a program with planning efficiency and dispatch commensurate with the expected requirements of the National Commission.

In summary, this is a sincere plea on the part of the undersigned to solicit the earnest consideration of the Commission to extend this vital support to our region in the vast field of diabetes and consonant with the National Diabetes Research and Education Act.

Respectfully submitted,

E. A. Haunz, M.D., F.A.C.P.
Professor of Medicine
University of North Dakota
School of Medicine
Secretary-Treasurer
American Diabetes Association
North Dakota Affiliate, Inc.

EAH/ert

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The University of North Dakota School of Medicine, Department of Medicine, submits to the National Diabetes Commission the following Proposal under the provision of Public Law 93-354:

> The Establishment of two Research and Training Centers in Diabetes Mellitus and two Training centers in Diabetes Mellitus. These centers would be located in the four AHEC Regions of Minot, Bismarck, Grand Forks, and Fargo, which are the same as those of the Medical School. These centers would serve a population of one million persons. Two research and training centers would be located in the Grand Forks and Fargo AHEC regions each of which serves a population of 330,000 (this covers 22 Minnesota counties). Two training centers would be located in Minot and Bismarck AHEC regions each of which serve a population of 150,000.

BROAD OBJECTIVE: To serve the Diabetics of the State of North Dakota and twenty-two counties in Minnesota.

SPECIFIC OBJECTIVES:

1) To provide continuing education, through training and information programs on Diabetes Mellitus, and related endocrine and metabolic disorders at all four centers, for physicians, (general practioners, residents, interns) medical students, nurses, (RNs, LPNs, student nurses, visiting nurses and public health nurses) health education officers from Indian Reservations, dietitions, opthamologists, podiatrists, pharmacists, dietary therapists, family nurse practioners and any other person or group who provides primary care to the diabetics of the population served.

2) To conduct basic and clinical research in Diabetes Mellitus and related endocrine and metabolic disorders at the two centers located in Fargo and Grand Forks.

3) To utilize existing professional and research laboratory capabilities as already exist in this state.

4) To provide an additional area-wide, rural community detection program via mobile van.

5) To expedite the formation, utilization and productivity

of these centers by their establishment in already existing AHEC and Medical School regions.

6) To maintain a cooperation liaison with the American Diabetes Association, North Dakota Affiliate, Inc.

7) To act in advisory capacity to assist hospitals in the population served with diabetic programs, ie rural teaching teams.

WITH INTENT:

To honor the North Dakota Physician, Dr. E. A. Haunz, Professor of Medicine, who has served the diabetics of this state for 25 years and who was chosen by the American Diabetes Association as "Clinician of the Year", this June in New York City by naming this effort in his name.

PROCEDURE:

The two research and training centers and the two training centers would be under the direction of the University of North Dakota Department of Medicine and would function on a year-round basis.

Quarterly instruction would be held for each respective trainee group.

A mobile van, equipped for road travel in rural areas, would be utilized for detection and education of rural North Dakota communities. This van would be staffed by a diabetes teaching nurse, dietition and a physician-in-training and would be operational during weather permitting periods with a plan to reach all areas within a defined period of time.

The centers would draw upon the expertise of local diabetologists and other health professionals for teaching purposes.

The centers would utilize audio-visual materials and other teaching aids such as cable TV available and purchase additional.

The centers would utilize visiting consultants at least 20

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days per year.

The budget would be handled through the UND Department of Medicine.

EVALUATION:

1) Pre and post testing on public awareness in diabetes of random sample of population served.

2) Pre and post testing on all community health personnel trained at centers

3) Pre and post attitude testing on professional staff of centers

4) Measure extent of increase in amount and types of research generated by programs

5) Number of diabetic cases detected and education programs held via the mobile van through-out North Dakota, Northwest Minnesota, Southwest Minnesota, and potential Eastern Montana and North Eastern Wyoming.

6) Site visits by AHEC consultants

PROFESSIONAL CAPABILITIES:

The University of North Dakota Department of Medicine would appoint a Director of Training and Research.

The University of North Dakota Department of Medicine would also appoint four Center Directors who will be RNs or RDs trained in diabetes. The AHEC Dean (MD) of each region will assist in administration and supervision of the programs.

Personnel in each area will include:

1) Diabetes Teaching Nurse
2) Dietition
3) Secretary

Existing research facilities that would be utilized are:

U.S. Department of Agricultures Human Nutrition Lab
UND Department of Medicine, Division of Endocrinology, V.A. Hospital
UND Department of Biochemistry, Ireland Research Laboratory
UND Medical Center Rehabilitation Hospital

These three groups have proven research capabilities as per enclosed reprints.

ESTIMATED BUDGET:

Director (MD) 25%	12,000
Clerical 7@ 7,500	52,500
R.N.s 5@12,500	62,500
EDUCATION AND TRAINING COMPONENT	
Personnel	
Lab Tech 1@9,500	9,500
Van Driver 1@9,000	9,000
Dietician 5@12,500	62,500
Fringe @10%	15,800
	173,800
Consultants	
50 days @200	10,000
	183,800
Office Space	
2800 ft^2 @550	15,400
Telephone	
300 Month x 12	3,600
Van	46,000 *
Postage	800
Travel	
In regions	
30,000 miles	4,500
Conference-Regional	
4 per year x 1500	6,000
Conference-Professional	
2 X 7 X 600	8,400
	318,550
ESTIMATED BUDGET	
Year #2	340,848
Year #3	364,707
TOTAL EDUCATION BUDGET	1,024,105
RESEARCH COMPONENT	
Personnel	
Phd. Chemists (2) 25,000	50,000
Lab Techs (4) 10,000	40,000
Research Asst (2) 12,000	24,000
Clerical (2) 6,500	13,000
	127,000

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	Fringe @ 10%		12,700
			139,700
	Travel 1x6x600		3,600
	Supplies		50,000
	Space		
	Grand Forks	$1500ft^2$	
	Fargo	$2000ft^2$ $3,5ft^2x550$	19,250
	Equipment		
	Grand Forks	80,000 ft^2	
	Fargo	80,000 ft^2	160,000
			372,550
YEAR #2			227,428
YEAR #3			243,348
			843,326
GRAND TOTAL			$2,110,779

* Van will be provided by the University of North Dakota School of Medicine.

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Testimony Presented to the
National Commission on Diabetes
by: Mrs. Joan Hoover
National Committee on
Diabetes in Youth

National Commission on Diabetes
Chicago, August 4, 1975

I had the honor of speaking to this Commission in Washington in April on this subject, and I have spoken to its members individually. I know that they are sympathetic to the problem that I bring before them. But I would like to take this opportunity, at this last Public Hearing, to reinforce a special need by sharing a letter I have just received.

I write a column for young people in Diabetes Forecast, the ADA Magazine. This letter from Shreveport, Louisiana sums up, better than I ever could, the real needs of the people who live with the affliction called Diabetes.

Dear Editor:

My name is Bobby Johnson. I have had diabetes since I was 3. I am 12 now. I am writing to ask you a question. My question is as follows:

I am 12 years old now. When I was in the 3rd grade the word got out about me being a diabetic. All the kids kidded me about it. Finally my mom and dad took me out of public school and enrolled me in a private school. I really felt strange. I will be in Junior High next year. What can I do about not letting the word out about me being a Diabetic?

Bobby Johnson

I know that medical research to alleviate the symptoms of diabetes and find its cure is the most important work we are doing. We need to find the funds to support this work, and the manpower and the centers; But what about Bobby? --and all the other Bobbys-- The people who live with diabetes that we are here to help. Bobby's not lying awake at night fearing the complications of retinopathy, neuropathy and renal failure. He's not even worrying about taking insulin injections and testing his urine. He is living in constant fear that the bullies in Jr. High will find out that he has diabetes and make his life miserable.

Can we in good conscience just say, "be quiet Bobby, and sit down. We're working on the problems of diabetes." or are we also here to make life a bit easier for the 10 million people who live with this disease?

I think this Commission has a unique opportunity to use its public forum to disseminate information and to Change Attitudes. And I don't think its an either/or proposition.

Therefore, I ask the Commission, while they are attacking the enormously complex problems involved in finding a cure for diabetes -- to also use their talents and their resources to cope with the needs of Public Education & Patient Education & Counseling. To find a way to help Bobby -- And not just his grandchild.

Thank you

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Testimony Presented to the
National Commission on Diabetes
by: Mr. Martin Katzenberger

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July 29, 1975

Mr. Victor Wartofsky
NIANDD
National Institute of Health
Building 31, Room 9A04
Bethesda, Maryland 20014

Dear Mr. Wartofsky:

The following is my statement to the diabetes committee on August 4th:

Running around in aimless circles, falling on the floor, and babbling uncontrollable words or half sentences, screaming with anxiety and punching anyone who might get in the way for no reason at all. These are the symptoms of a severe insulin reaction, and this type of reaction had to be dealt with by my wife and I, as well as my sons teacher.

It is a constant awareness that this type of severe reaction could happen at anytime and without any warning to the diabetic.

Gentlemen, I am the father of two diabetic children, and I am very concerned that an end may never come to this serious problem or the complications that may face my children or any diabetic in future years.

Therefore, I appeal to this committee to allow as many dollars as is possible to flow into research so that a cure can be found soon.

Cordially,

Martin F. Katzenberger

Martin F. Katzenberger
Executive Director

bk

Diabetes Association of Greater Cleveland 2022 Lee Road Cleveland, Ohio 44118 371-3301

Testimony Presented to the
National Commission on Diabet
by: Mrs. Joanne Lane, R.D.
Dietitian, Diabetes Assoc
of Greater Cleveland

August 1, 1975

National Commission of Diabetes
McCormick Inn
23rd Street Lakeshore
Chicago, Illinois 60607

Attention: Dr. Oscar Crofford, M.D., Chairman

Gentlemen:

As a registered dietitian and staff member of the Diabetes Association of Greater Cleveland, I strongly support the papers being presented at the National Commission on Diabetes by the Nutritionists.

At the present time the public is seeking correct information about diet. There is also a need for current audio visual aides such as films and slides for educational purposes that could be used by professional people and the public.

Very truly yours,

Joanne Lane

Mrs. Joanne Lane, R.D.
Staff Dietitian
Diabetes Association of Greater Cleveland

A Health Fund Agency

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Testimony Presented to the
National Commission on Diabetes
by: The Hon. William A. Steiger
U.S. House of Representatives

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July 30, 1975

Dr. Keatha Krueger
National Diabetes Commission
National Institutes of Health
Bethesda, Maryland 20015

Dear Dr. Krueger:

I want to compliment the Commission for holding these hearings and for your efforts to develop a long-range plan to combat diabetes. I appreciate this opportunity to present my views.

Attention has been given to cancer research, and to heart and respiratory diseases, but for some reason, the fifth leading cause of death by disease -- diabetes -- has failed to get either the attention or the research support it deserves. This lack of support may well be a result of the public's lack of information about diabetes and about the nature and extent of its medical complications.

Beginning in 1972, Congressional interest helped to shed light on the fact diabetes mellitus is a major health problem that directly affects perhaps as many as 10 million Americans and which may also affect in all likelihood their millions of children and grandchildren.

Congress established this Commission as part of P.L. 93-354 to develop among other things, long-range, co-ordinated diabetes research, and, equally important, to promote detection and education programs.

Diabetes research, I think you will agree, should focus on the finding of preventative measures as well as on helping those persons who have already been diagnosed as diabetic. I hope the Commission will recommend that sufficient Federal support be provided so that competing efforts can become complementary and co-ordinated efforts. We have all heard that dramatic breakthroughs may be close at hand, but they can be achieved only with an acceleration of Federal support.

In light of the growing prevalence of diabetes among youth, I cannot stress strongly enough the need for improved parental and child perspectives. High quality educational information, sensitive to their every need, must be made available to diabetics, to the parents of diabetics, to their wives and husbands, and to others who live and work with the diabetic.

The need for a comprehensive, well co-ordinated plan is critical. I am anxious for your report to Congress; I think it will produce great benefits for those who have diabetes and also for those who do not have it but who may need to help others respond to the practical, daily problems of diabetes.

Sincerely yours,

William A. Steiger
Member of Congress

WAS:kf

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TRANSCRIPTION OF TAPED INTERVIEWS

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TRANSCRIPTIONS OF TAPED INTERVIEWS

INTERVIEW #1

Q. You say you are 48 or 49 years old, and how long did you say you had diabetes?

A. About ten years about.

Q. You had mentioned some other conditions you had had along with the diabetes?

A. Yes, I have kidney disease, bladder trouble, and arthritis.

Q. You mentioned high blood pressure?

A. High blood pressure, right.

Q. How often do you come to this diabetic clinic?

A. Once a month, sometimes every two weeks, but mostly once a month.

Q. How do you get here?

A. Well, I have to get someone to bring me.

Q. You don't drive yourself?

A. No.

Q. Does that cause any problems?

A. Yes, that's the reason I wasn't here last time and I was sick and I wasn't able to go down to catch a bus.

Q. I see. How far from this clinic do you live?

A. About six or seven miles.

Q. Do you work at all?

A. No, sir, not able to.

Q. Do you understand why your doctor wants to see you regularly here? He probably tells you he wants to see you once a month. Do you understand why he needs to see you?

A. Yeah.

Q. Now we want to ask you some questions about the testing of your urine. Do you test your urine every day?

A. Yeah. Most every day.

Q. In the morning, when you go to the bathroom, do you test that first sample or do you wait ten minutes and then test it?

A. Well, the first sample I don't test and after I pass the first one, then walk around awhile, then the next one I make the test.

Q. You test the second one. Do you understand why you have to test your urine every day?

A. Yes. To keep check on my sugar.

Q. If you spill in sugar what do you do?

A. Well, the doctor said that if I test my urine every morning, if it's 4+, he told me to add 15 more units of insulin, and if it's 3+ he didn't tell me to add any.

Q. Just if it's 4+.

A. Yeah.

Q. Now some things about your feet. Have you been told how to take care of your feet?

A. Yes.

Q. Who cuts your toenails?

A. I do.

Q. You cut them yourself?

A. Yes.

Q. Have you ever had any problems with infections?

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A. Yes, sir, that's what I was gonna tell you. I have a history of infections; just every so often I have infections from my kidneys and bladder.

Q. Do you understand why it is really important to take care of your feet?

A. Yes 'cause I know my leg, that's what they told me, but I haven't had any problem at this stage.

Q. How much do you weigh?

A. Well, I've been weighing 321, but I weighed 290 today. I've been losing weight.

Q. Are you on a diet?

A. Yes.

Q. This is very important, do you understand how to follow that diet?

A. No, sir.

Q. Is it confusing to you?

A. Yes, sir, it really is.

Q. Are the foods that are on that diet the regular foods that you and your family eat at home?

A. Well, not all of 'em. Because I have to sweeten my food with this, uh, Sweeta and, seein' that that stuff bother my bladder and I've been on it for so long it got to where it really makes me sick.

Q. Do you buy any special foods for this diet that they've given you?

A. Yes, I had to buy special meats, extra lean, and all that, it's real high, if I had any hamburger it would have to be extra lean.

Q. Do you prepare your own foods?

A. Yes, sir, when I feel like it. When I don't, the children have to do it.

Q. Has this diet caused you any problems, and when I say problems, has it caused any hardship on you? You know you've got to eat, but here in the South there are certain foods that we have that a lot of other

people don't have and a lot of the diets that are printed don't have those foods on there. I know, my people make a diet and they don't have turnipgreens and rutabagas and you know things like that that are typical southern foods and I was wondering if the things you like to eat are found on the diet?

A. Some of them.

Q. But not all them?

A. Uh huh.

Q. Now, do you understand why you're on a diet? Have they explained to you why it's necessary to get your weight down?

A. For my health. That's what the doctor said. For my diabetes, it'd be under better control if I could get it down.

Q. Do you follow your diet? Do you stick to it?

A. Yes. Every once in a while I may vary from it a little but I mostly stick to it.

Q. Are there any times when you might eat a piece of pie that's not on there?

A. Yeah, like my mouth be so bitter and I be like sick or somethin', that's when I really may go for half of a coke or something to just release that bitterness.

Q. Now, there are certain symptoms, conditions that occur when your blood sugar is either too high or it's too low. Do you understand the problems that will occur if your blood sugar gets too high or it gets too low? The weakness and the sweatiness and the . . .

A. I've been told that I'd be weak if it get too low I believe and sweat.

Q. I've been wondering if you know how you might feel if you start experiencing . . .

A. I wouldn't know if my blood sugar was too low. I really wouldn't know what to do.

Q. And what medications do you take?

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A. I take high blood pressure medicine. I take a water pill and I'm on some kind of orange medicine for pertussion in my legs and knees and orange juice every day. And I take 100 insulin MPHU100 in the morning, 60 units, and I take 20 of regular U100 in the evening. And if my blood sugar is 4+ I add 15 more units to the 20.

Q. Have you ever missed a dose?

A. Yes, sir.

Q. Any particular reason -- did you just forget it?

A. I sometimes have a problem getting it at the store. The doctor wrote me a prescription and I took it to the store and the man wouldn't give me but one bottle.

Q. Was there a reason for that?

A. I don't know what it was. And he give me the wrong kind of insulin. And I have been real sick. He give me three bottles of it and I took it. When I went back and asked him so badly for it then when I took it back -- well he changed it but he -- all of 'em but one bottle -- and I have been takin' this insulin, this other insulin, and I didn't know why I was sick and I went looking at the bottle and it wasn't the kind.

Q. He had given you the wrong insulin?

A. The wrong insulin.

Q. The druggist did?

A. Yes.

Q. Now did you pay for your own insulin or does anybody help you pay for that?

A. I'm on Medicaid.

Q. You're on Medicaid and they take care of that for you?

A. Yes.

Q. Do you use disposable syringes?

A. I have to buy those. The syringes are all patient. I can buy all that.

Q. Right. But do you use the disposables?

A. Yes.

Q. The ones you just use one time and throw away?

A. Yes.

Q. Do you give yourself your own injections?

A. Yes.

Q. Now is there anything that you can think of that this diabetes has caused you any problems in your life or -- I'm talking about has this made you less than normal or has it made you feel anything other than just being tied down to a diet and taking injections?

A. Yes, I have a problem. I don't know whether it's from diabetes or what. Can I just tell you anything?

Q. Surely.

A. But I have a problem down real low and I just stay sore all the time. I can't touch myself and I can't have sex relation. I get no results. I feel uncomfortable. And I stay sore all the time down there. And that is a real problem. Sometime I can't hardly sit down and when I pass my water it just hurt me so bad.

Q. Burn?

A. Burn and hurt.

Q. Have you told this to your doctor now?

A. Yes, sir.

Q. Does your blood sugar usually -- do you keep it pretty regular or does it usually run a little high?

A. It stay high. For the last month it's been 4+ every morning and I don't eat and I don't have an appetite to get up and it's still 4+. And I take this insulin and I have just been so sick the last month. I just don't like -- can't get it down. I've been usually getting it down but...

Q. But all day it's running high?

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A. Yes, it's running real high. And this hand hurt all the time. I already had surgery on that hand but that hand hurts me so bad I can't just hardly use it. Just this whole arm.

Q. How does it hurt now?

A. Just ache and pain and burn. This whole hand.

Q. What about your feet?

A. My feet do the same. And this was just so, oh, it's just so bad. It look like all the feeling go out of it. Just ache and pain and I can't hardly walk on it.

Q. Have you ever stepped on anything and not felt it?

A. Not feel it. Sometimes I can't hardly feel it until it's there.

Q. Like your foot's dead almost?

A. Right. That's the way it feel.

Q. Anything else that you would like to . . . ?

A. No, sir, I don't guess so that I think of right now.

Q. Well, I appreciate your taking time to talk to us about this. Thank you again.

INTERVIEW #2

Q. How old are you?

A. I'll be 62 - 66 the 22nd of this coming May.

Q. Where do you live?

A. I stay at about nine miles on the other side of the forest.

Q. How long have you had diabetes?

A. Well, I've been coming here about I imagine it's around seven year.

Q. Seven years?

A. Yes.

Q. Have you had any other conditions besides diabetes, like high blood pressure?

A. No, sir, not that I knows of. I just used to have them black out spells with it. I really never was the cause of it.

Q. And you say you live nine miles away?

A. Yes.

Q. How do you get to the clinic?

A. Down here?

Q. Yes.

A. Well, a man I used to work for, well, he lets me have his pickup when he ain't using it. And sometime my daughter bring me. Just first one and another bring me.

Q. But you don't drive?

A. No.

Q. Is this creating any problems for you getting here?

A. Yes, sir.

Q. Do you work?

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A. Me? No, sir, I used to just go around and work some but now I just take exercise where he got some cows out there and I just walk two of the cows back of de house and walk two of them just for exercise. I just ain't able to take it like I used to. I can't hold out.

Q. How often do you come to clinic?

A. I come last Wednesday and then I had to come back today. Well, they'd been givin' me two months and sometimes three months. But this time they give me just two weeks. Well, I don't know how it come out today.

Q. In other words, you come in about every two or three weeks or something like that?

A. Well, I been coming every two months or three months and I come this time, they had me come this Wednesday. I come last Wednesday and they had me to come back today.

Q. I see. O.K.

A. Well, I don't know how long they'll give me to come back.

Q. There are a few things that we'd like to ask you about your urine. Do you test your urine?

A. Yes.

Q. Do you do that every day?

A. I test it about three time a week.

Q. Three times a week?

A. Yes.

Q. All right now. The first one in the morning, do you usually take it in the morning?

A. Yes, but when I first get up, well, they don't want me none to check that but I check it that day, but they don't want me to check it the first time when I get up every morning. They want me to just go to the bathroom and then next time check it.

Q. Do you understand why they ask you to do that?

A. No, sir, he never did tell me.

Q. He wants you to do it?

A. Yes.

Q. O.K. It is clear to you why the doctor wants you to check your urine?

A. No, sir, but if he just -- he just told me whenever I get up every morning don't use that for what I lay down a night but get up and go to the bathroom, then when I have to do it again, well, check it.

Q. Right, then check that one?

A. Yes.

Q. But I really was interested in, you said you're checking it maybe three times a week.

A. Yes.

Q. Is it clear even why he wants you to check that urine?

A. Well, I think what he talked was account of sugar.

Q. Right.

A. Well, he gimme this here -- I got this tape what I use -- well, he said, if I ain't mistaken, he said if it was yellow, it is all right but this time I checked it it was dark green. It showed on the tape just like a . . .

Q. And it's got plusses on there?

A. Yes.

Q. Now if you have a color on there say that's got a +3 or +4, do you have to do anything to your treamtment or do you get in touch with him or what do you do when it shows up +4?

A. Well, I can't read you know, but I just goes by the other.

Q. Oh, I see. You can't read?

A. No.

Q. Well, let me ask you then some questions that I might about your diet. Are you on a diet?

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A. Yes.

Q. Now who prepares your food for you?

A. My daughter she cooks for me.

Q. Have you lost any weight? Are you sticking to . . .

A. Oh yes -- when I first started I weighed 230 and now I weigh 187.

Q. That's quite something.

A. Yes, sir.

Q. Are you still losing weight?

A. Yes, sir.

Q. Now the diet that the doctors have given you -- is that the regular foods that you and your family eat or some special foods?

A. Well, they fixes mine to itself 'cause they eating seasoned and I can't season mine. You know they got some kind of sugar that I use -- it's kind of like this sugar that use ins uh -- it's in a little bag -- you may know what it is -- for the diabetes.

Q. Right. Well, in other words, your daughter's having to fix a separate -- foods -- and that must create a problem.

A. Yes. I believe she's worse than the doctor is on me.

Q. Is she really?

A. Yes.

Q. Does she weigh it out or measure it?

A. They ain't gonna let me eat nothing I don't supposed to.

Q. Do you ever cheat?

A. Yes, sir. I told her, I had the four of 'em out on Sunday, they fix dinner. I told them I say, ya'll fixin to starve me. She say, "Daddy, no this ain't gonna starve ya, you'll get use to it." Well, I was already used to it anyhow.

Q. Do you ever slip a piece of pie or a coke or something?

A. I drinkin'the coke and they told me not to drink dem 'cause they got too much sugar in them. Well, I stopped them. I drinks a little tea but has to be with this here diet sugar.

Q. Right. O.K. Are you clear and do you understand why the doctor is asking you to stick to the diet?

A. Well, he says I would live a happier life if I would do less and would get along fine. Well, I feels a whole lot better at times. At times I get so I can't hardly get along or give out or get anywhere.

Q. 'Cause weak?

A. Yes. My breath gets kind of short on me. Then I sit down and rest a while and get up and go right on.

Q. Let me ask you next something if I might about your feet. Are you having problems with your feet?

A. Well, my feet used to would just get numb, clean on across the toes like that. Both feet and my one arm just over here and my fingers they would get numb. When I come here I told them about it -- he gave me some kind of tablet and it slowed dat up. But the last month, well, they just getting numb just a little bit every once in a while. They normally been feeling pretty good in my shoes.

Q. Do you ever cut your toenails?

A. I was told not to cut them but when I did just to have them square just don't cut them close.

Q. Straight across.

A. Yes.

Q. But do you do that or does someone else do that?

A. Well, had to get my daughter to do that 'cause I can't hold my breath long enough to stoop over like that.

Q. Now do you understand why they have explained to you to take care of your feet like that?

A. Yes, sir. They don't want me to bathe in no hot water and no cold water, just lukewarm.

Q. Right. Anything about the infections and so forth, that it's easy to get infections if you...

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A. Well, I don't never have no trouble with my feet you know -- no infection like that. I ain't had no sores on my feet, the legs or nothing like that. I ain't have no bunions on my toes 'cause I always try to get my shoes big enough to keep from havin' bunions. I got a brother got them. Man, they's tough on him.

Q. You know when your blood sugar gets too high or gets too low the sort of symptoms that you know you feel different ways, do you understand the difference in those?

A. Yes they told me when I get thataways to always keep a little stick of peppermint candy in my pocket and bite those just a little -- just a small piece and suck it. When I do that I get to feeling all right.

Q. Do you ever have those episodes?

A. Yes, sir. I gets kinda drunk at times and I sit down and cross my face with my hands. Get to feeling all right. I kind of get where I can't hardly see some time -- can't see no small writing a' tall.

Q. If you had to fix that diet we were talking about yourself, it would be a real problem to you, wouldn't it?

A. Well, in a way. I been watching 'em. I can make out with it if I had to fix it myself. But I watches that girl way she fix it. Well, it'd be pretty bad for me to fix it, but I could fix it you know what nothing wouldn't hurt me.

Q. Right. What kind of medications are you on? How do you treat your diabetes?

Q. What medicine do you use to treat your diabetes?

A. I got something in my pocket that they give me a for 'scription last time but I had to bring that back because it ain't like that I been taking.

Q. And that says that's Ampicillin. That's an antibiotic.

A. Well, it helped but I been this the first time I been takin' of these capsules since I been coming here. They've been different kind of tablets.

Q. Oh, this one is different from the one you have been taking?

A. Yes. I told them what kind I had this time and they asked me what kind of medicine I had and I told them. Well, they wrote me a 'scription the doctor did and when I had it filled that's what they give me.

Q. What color were the pills you used to take?

A. They was white and I got one white, two white kind, and a little bitty ole green kind.

Q. Do you know the name of them?

A. No. But it was for the sugar. He didn't say what the other was. But some sugar tablets I could tell them good.

Q. Have you ever forgotten to take a dose of those pills? Now this is the pill that you've just shown me.

A. Yes.

Q. It's different from the sugar pill you were taking?

A. Yes, sir, 'cause these was capsules and them were just plain pills.

Q. Right. Have you felt any different since you were taking those?

A. Nah, sir.

Q. Not any different?

A. Nah, sir. Don't seem like these is holpin' as much as them others, the sugar tablets.

Q. I was just wondering if you ever forgot to take those sugar tablets, did you ever forget to skip a dose?

A. Oh no, sir, I don't forget them.

Q. You take them all the time?

A. Yes.

Q. How long have you had diabetes?

A. I'd say about six years.

Q. Is there anything else that you can think of that you'd like to mention that's any problem to you as far as taking care of yourself or has this caused you any real hardships having diabetes?

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A. I'd like to know if I can find out, I hurts right across there in my side, it ain't my back, it's just right in there. It's some kind of little old knot rise up right about there. I can touch it with my finger and it may not come up no more than a month or two months.

Q. That's in the small of your back?

A. Yes. Right in there. But when I stoop over I can't hardly get back up. When I stoop over I just have to put that leg out there and come back up again. I just can't stoop over or do no kind of work a' tall, if I did I'd just . . .

Q. Well, this is real help to me. I appreciate you coming in and letting me talk with you and I hope that everything goes well with you.

INTERVIEW #3

Q. How old are you?

A. 55.

Q. Where do you live?

A. 2862 Booker Washington.

Q. That's here?

A. Yes.

Q. By the way, this is Mrs. . . . sitting in with Mr. . . . How long have you had diabetes?

A. Well, I begin to know that I had it in 1951.

Q. Do you have any other conditions except those I had mentioned that you had lost your eyesight, do you have high blood pressure or --

A. Yes, I have high blood pressure and I had glaucoma. I was operated on for my lungs, a spot on my lung. I had hurtin' in my leg, arthritis.

Q. You don't work, do you?

A. No, I don't.

Q. How often do you come to the clinic?

A. Sometimes two, three times a month. He goes to another clinic because he's always with this diabetic thing. Once or twice a month.

Q. In other words, you come here routinely?

A. Yes, sir.

Q. Do you bring your husband?

A. Well, I try to work as much as I can but sometimes I have to get up 'cause I don't have anybody to come with him, 'cause he can't get around by himself.

Q. You have to take off from work to bring him to the clinic?

A. Yes, sir.

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Q. This can cause some problems I imagine?

A. Getting up here -- that's another problem.

Q. When did you come this morning?

A. We got here at 8:15. We went to the lab at 8:30.

Q. It's 1:10 now and all you patients have been here all this morning and you're still sitting here waiting?

A. Yes.

Q. Has it been made clear to you or do you understand why your doctor wants you to come here regularly?

A. Well, because he's diabetic. It's kind of hard to keep under control because he's had it so long the doctor say. And this way it costs less than having a private doctor because we're financially unable to have, you know, a private doctor.

Q. I'd like to ask you some things about your urine testing. Do you test it every day, and I'm sure that you (Mrs.) would have to read it for him? When you get up in the morning, do you test the first time you go to the bathroom or do you test the second time?

A. The second time.

Q. Everyone seems to be doing the second time. Now do you understand why it's important that you test this urine every day?

A. Yes, sir. Sure do.

Q. If he's spilling any sugar, now do you know how to control that?

A. Yes, sir.

Q. O.K. Do you have any problems with your feet now, I mean you know it's important to take care of your feet. Have they explained all that to you?

A. Yes, sir.

Q. Do you have someone cut your toenails and do you take care of his feet like that?

A. I don't because my eyesight is not too good and I don't, we just usually let the doctor look at it, and tell him what to do about it.

Q. Good. But there's a reason that they ask you to take care of them.

A. They make sure that I get shoes large enough for me.

Q. You look like you're as fit as a fiddle, you must be not overweight. Are you on a diet?

A. Well, yeah, I been borderline, but I lost some weight. I weighed 171 once but the doctor said to get down to 150.

Q. You're 170 now?

A. Yesterday morning I weighed 170 at the house.

Q. Do your doctors here -- they've explained its very important about your weight?

A. That's right.

Q. You said you were a little hesitant about your diet. Are you on a diet?

A. Yes. He really don't get much exercise 'cause the way I try to work at evenin' time I don't feel like walking and he needs to get out and walk and get some exercise and I'm not a young woman, I don't feel like walking.

Q. We find that this is the hardest thing in treatment because sometimes you get a diet and it has food on there that are not what you ordinarily eat at home, what you're used to eating, and what you can afford to eat.

A. That's right. That's the main problem, affordin' it, this fruit and stuff he really needs decent meal, it's one thing it's so expensive and with him not workin' and we have to buy medicine and everything and social security don't go very far. We're thankful for it but we can't make it without it. This is (diet) hard.

Q. Now you had mentioned about the bus, would you like to tell me that again?

A. Yes. On Monday morning I was trying to get through to the rented bus and it was sometime before I could get through the line to ride one and when I did it was nearly 11:00. But the lady told me then that she could ride me up there, it would be 2:00 before they could bring me up here. I had to be here at 8:00 so I thought it would be best for me to try to get here another way without someone trying

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to bring me up here. We'd have to get a cab to get back because we have no other way to go.

Q. Do you ever skip any meals? (Getting back to the diet thing because we consider it so important.)

A. No. Lessen I'm just not at home, I have to have something like a cookie or cracker. But when I'm at home I don't skip any meals.

Q. When your blood sugar goes high or when it goes too low, there are certain symptoms that you feel. Have you ever experienced anything like this or do you know what, how to take care of your symptoms if they occur?

A. Well, I know that when I would get dizzy, they try to get me a diet drink or something to eat.

Q. What kind of medication are you on?

A. Well, I'm taking my tablet for arthritis, and heart tablets, and insulin.

Q. How much insulin do you take?

A. He takes 85 in the morning and 20 at night.

Q. And you're having to buy this yourself?

A. We don't buy the insulin but we do buy all the rest of the medicine.

Q. What about your syringes? And cotton and alcohol?

A. We buy that. We get the needles with the insulin but we have to buy the syringes.

Q. Are you using the disposable kind? That you use one time and throw away?

A. Yes, sir.

Q. Have you ever skipped a dose of the insulin? Do you give it yourself or do you (Mrs.) have to give it to him?

A. I give it to him.

Q. Well, this is basically what we wanted to know and I appreciate both of you talking to us. We thank you.

A. We thank you.

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INTERVIEW #4

Q. Mrs. . . . is in with this patient today because she has had one leg removed. How much do you weigh?

A. Well, I didn't weigh today.

Q. You look like you're pretty normal weight.

A. I weighs the last time, I weighs 209.

Q. Where did you live?

Q. How many miles is it away from the clinic?

A. It's a good ways. It's about seven, eight miles.

Q. How do you all get to the clinic when you come?

A. We have to get somebody to bring us in the car.

Q. Does this create any problems for you, do you not drive?

A. No, but I work, I took off today to come with her.

Q. You have to get someone to bring you every time? How often do you come to the clinic?

A. I come here to the clinic every three or four, every three months. I was here the 23rd April and I haven't been back until today.

Q. How often do they want you to come, every three or four months?

A. That's really giving me time.

Q. Is it clear to you and do you understand why they want to see you that often?

A. They said they're keeping a check on me.

Q. We just want you to understand that they are interested in taking care of you and watching your blood sugar.

A. They want to watch my blood sugar and my blood pressures. They want to keep in touch with it and so that's why I comes back. Sometime they give me appointment for three months and then sometimes, this time you see it's four months.

Q. What time did you get here this morning?

A. I got here about 8:00.

Q. It's now about 11:20. Do you usually spend this much time in the clinic?

A. Oh yes.

Q. You stay here most of the morning?

A. All the morning some mornings. Yeah, all the morning I stay here and wait.

Q. You just sit around and wait?

A. Just wait.

Q. Are there any types of programs that are going on here for you while you're waiting or are you just sitting out there in the lobby?

A. No, we're just sitting out there waiting.

Q. Would you like to see, say after they've drawn your blood, taken your tests and while you sit and wait, would you like to maybe have some sort of an educational program presented to you on diabetes or maybe health care, just anything to keep you occupied awhile? Would it be interesting to you to sit around with say six or eight other ladies in a room and you all talk about your problems and your diabetes and how you're taking care of it and would that give you an opportunity to see how somebody else is doing it? Would these types of things be of help to you instead of just sitting there?

A. Oh yes. Love to look at programs goin' on, that keeps my mind on the program and not on the sickness.

Q. Do you have any other medical problems? Do you have high blood pressure or heart problems?

A. I got high blood pressure. Yeah sometime I have heart problems. Sometime it be normal. No, the doctor didn't tell me I had heart problems, told me I had high blood pressures because I'm diabetic. They checked my heart last time I was here.

Q. What about eye problems?

A. Oh yeah, I have problems with my eyes. Both of my eyes have been operated on -- cataracts.

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Q. Any kidney problems?

A. My kidneys works all right.

Q. Do you take any other types of drugs other than the insulin you take for diabetes? Are you taking any other types of medication?

A. No, I'm just taking insulin, blood pressure tablets.

Q. But you do take blood pressure medicine?

A. Uh huh.

Q. How do you get your drugs? Do you personally buy these or are you on Medicaid?

A. Medicare.

Q. Does this take care of the payment of your drugs?

A. That's right.

Q. All of it?

A. That's right, unless I just have to buy a little common medicine like milk of magnesia or something like that. But Medicare take care of everything else.

Q. You are on insulin?

A. Un huh.

Q. How long have you had diabetes?

A. I've been having diabetes ever since 1950.

Q. And you're on insulin now?

A. Uh huh.

Q. How much insulin do you take?

A. I takes 20 a day.

Q. Do you take that in the morning?

A. That's right, in the morning. I was taking more than that but the shares wasn't hard enough, I had to take U100 and since I have to take U100 I don't have to take but 20 c's.

Q. Do you use the disposable type of syringe, the type you just throw away?

A. That's right.

Q. Would you know what would happen if you skipped a dose? Have you ever done that?

A. Well, I know what would happen if I do that. I'd go into a colm, a weakness. I've been through all of it so I know about it.

Q. You had those sweating, weak, trembling spells?

A. That's right.

Q. What if you took too much, do you know what would happen?

A. It would reply the same kind.

Q. You're not having any problem getting your medicine. Who gets the medicine for you?

A. My brother gets it.

Q. He picks it up for you?

A. Yes.

Q. Have you ever skipped a dose of your insulin or forgotten to take it?

A. Oh I have, I have skipped about one dose. I only have to take it once a day and so I have skipped that once a day but it didn't take no effect on me.

Q. You inject yourself?

A. Oh yeah.

Q. If you did take too much by accident and you had one of these reactions that you just talked about, who would you call? What would you do if you started having any problems like that?

A. So what would I do if I get to the place where I have all those weak spells -- well, when I get like that I feel it coming on you see before and then I'll go in and get me some preserves or sugar. I take a tablespoon of sugar or a tablespoon of preserves and eat here

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Q. Do you test your urine every day?

A. Un huh.

Q. When you go to the bathroom the first time in the morning, do you test that or do you wait for ten or fifteen minutes and then test the second time you go to the bathroom?

A. I test in the morning after I get up and eat. And then I test my urine.

Q. Do you use the little stick?

A. That's right.

Q. Do you understand what it means on that stick or that little chart when its got 4+ and problems?

A. And being Negra you know, if it comes out low sugar it mean negative, that's what it tests. I got those sticks and I got.

Q. What would you do if it was showing up 4+ on there? Has it ever done that?

A. No.

Q. That's good. I just wondered if it did, that would show your blood sugar way up high.

A. I haven't seen 4+ on there yet. One morning I tested it it was trace.

Q. Well, you look like you count on good control. You mentioned that you had had one of your legs removed, was this because of the diabetes?

A. I reckon it was because of the diabetes, but I don't know. I'll tell you what started it up. I was cleanin' up for Christmas and I stuck a tack in my toe, in my little toe next to the big toe and it got worst and worst and I was using my home remedies and so I was doing everything I thought the people would tell me to do. It got worst and worst and finally had to bring me to the hospital. They had to remove my leg. So I guess it was the diabetes doin' that.

Q. When you stepped on it, did you feel it go in your foot?

A. I didn't feel it go in my feet until after and I saw blood in my house slippers. And I say I wonder why I got this here blood on my feet. So I pulled off my slipper and that tack had gone clean through the little sole the slipper had and gone into the toe and the tack was still in there. And I looked and said this here's a tack. I pulled the tack out and wrapped my toe so it wouldn't bleed in my slipper too much and from that it just got worst and worst. No matter what I did it wasn't gettin' on any better. That was the diabetes causin' that.

Q. Is it clear to you, I mean you already lost a leg, so I was wondering if it's understandable to you why its important that you keep your toes trimmed properly and infection sets up in those feet so easily til that's what really happened and it's so important to keep them clean and those toenails trimmed. Do you cut your own toenails or does someone do that for you?

A. I cuts them myself.

Q. Let's talk about your diet. Are you on a diet?

A. Uh huh.

Q. What're you smiling for? This is one of the biggest hangups I've got is that so many times people in our area don't have the proper foods listed on these diets that they give out til I'm black and blue in the face trying to convince them that they need to have a southern diet that's cut turnipgreens and rutabagas and buttermilk and some folks like to eat. Do you really try to stay on the diet?

A. As best as I can. Things are so hard now, you know how it is.

Q. When you say hard, you mean hard to buy food?

A. That's right.

Q. This is a problem to you having to buy special diet?

A. They give me a chart and it's got all on there such things as peas, greens, and a little meats, fish and all that I can eat like that. They got it on a chart the dietitian give me but sometimes that is hard to get.

Q. When they gave you that diet, did you understand it?

A. No.

Q. You pick out different things from it and exchanges?

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A. On that diet they say you can eat whatever food your family eats but take yours out before you season it up and salt it and all like that. But take yours out and you can eat peas, tomatoes, squash, and all like that. But you can cook it right along with your family's cooking.

Q. Do you ever eat any pies and sweets and cheat a little bit?

A. I sure do.

Q. Do you prepare your own food?

A. After I had my leg taken off, someone would prepare my food for me. Look like they'd try to prepare everything I needed like spinach, squash, and all like that. They didn't go into no big meat but chickens and all like that. When I prepare my own food, I just prepare common foods and eat that.

Q. I really appreciate your talking to us and we'll some way be able to help all diabetics some day. Thank you.

INTERVIEW #5

Q. Where do you live?

A. It's about 30 miles.

Q. How do you get to this clinic?

A. They run a truck transport, whenever you can hit that day, you know, whenever they be gettin' a load, they comes, but sometimes I got to get here myself because they don't come on my day.

Q. Do you drive? You have to get someone to bring you?

A. Yeah, yeah.

Q. Do you live that far out? That must be a problem to you.

A. Yeah.

Q. How often do you come to the diabetic clinic?

A. Well, I was on shots once before, seven, eight years ago. Then they gave me pills but then it got bad and now I'm back on shots.

Q. Do you understand why the doctor wants to see you so often?

A. No, sir, I really don't.

Q. He just tells you to come back so many weeks or so many months and then you just come back and you don't really know why he wants you to come back when you're taking care of yourself?

A. He told me that I had eaten the wrong things and then I had to go back on the shots . . . and they say I wasn't eating what I should have eaten and that run my sugar up you see. So they put me back on the shots.

Q. Do you have any other medical problems? High blood pressure or arthritis?

A. I have hurtin' in my leg just sometimes I can't get along, my ankle got cut.

Q. Does it burn and pain you or just ache?

A. Aches. Yeah.

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Q. Do you buy your own insulin or are you on Medicare, Medicaid?

A. Medicaid, yeah.

Q. That takes care of it for you?

A. Yeah.

Q. How much insulin do you take a day?

A. I take, I was taking 30 but that was too much but I'm taking 20 now.

Q. Do you ever skip a dose?

A. No, I had to skip it today because I had to leave before I could get it.

Q. When you're home do you forget to take it? Do you always take it?

A. Yes, I take it every day.

Q. Do you -- would you know what the feelings and the reactions that you would have if you had taken too much?

A. Yes, I taken too much one time. It made me foolish about the head and dizzy.

Q. Do you test your urine every day?

A. No, sir, not every day. I <u>should</u>, been used to it every day but I haven't been.

Q. What about every three or four days? Once a week?

A. Yeah.

Q. When you go to the bathroom when you get ready to test it, do you test it the first time or do you wait ten minutes and then go back to the bathroom and test that second time you go?

A. No, sir. The first time.

Q. Do you have a little stick that you dip in there to test it? A little piece of tape?

A. No, sir, I drop a pill in.

Q. You use the pill? O.K. Do you know when you're spilling sugar in there what it colors all?

A. Yes.

Q. Have they explained to you the importance of taking care of your feet?

A. No, sir.

Q. Do you cut your own toenails or do you have someone do that for you?

A. I have somebody do that for me.

Q. But they never have told you how important it is to take care of your feet?

A. Oh yes, he did tell me, he said don't cut it too close.

Q. And buy big enough shoes?

A. Yes. Yes, sir.

Q. Are you on a diet?

A. Yes, sir.

Q. Do you cook your own food?

A. Yes, sir, I have to cook it.

Q. Do you live with any other members of your family or are you by yourself?

A. I'm by myself now, but for awhile most of the time I stayed over by my mother -- she's 90 years old.

Q. Do you have to buy special foods for that diet or can it be just things you can afford to buy and things you've got in the house?

A. That's just what I've been doing. I should be able to buy some stuff but this year we raised a little garden stuff and peas.

Q. It's a hard time for you to buy the food on that diet?

A. It sure is. Yes, sir, it is.

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Q. Did they give you a diet, a sheet to follow of things you're supposed to eat and things you're not supposed to eat?

A. Yes sir, they give me one.

Q. Do you understand that diet?

A. Yes, sir, pretty good.

Q. When they gave it to you, did you have the things on there that you like to eat that you find peas, that you grow, were they listed on the diet or were there things on the diet that you don't ordinarily have around the house?

A. Well, most of the time I didn't have it around the house.

Q. You just have to eat what you've got at home?

A. Yes, sir.

Q. Any special problems that this diabetes has caused you? Do you live a normal life, has it affected your living? Anything caused you to keep out of work?

A. Yes, it ain't alway been that way but this last two years I haven't been able to work.

Q. How old are you?

A. I'm 73, will be 73.

INTERVIEW #6

Q. How old are you?

A. 'Bout 40.

Q. How much do you weigh? You look like you're not overweight.

A. 130.

Q. How often do you have to come in to see the doctor?

A. About three months. Sometimes two.

Q. Do you understand why the doctor wants you to come back that often?

A. Yeah -- sometimes sugar be up sometimes.

Q. Do you have to pay for your own drugs?

A. No. Medical card.

B. What type of medicine are you on for your diabetes?

A. UNA.

Q. Insulin?

A. Yeah.

Q. Do you give yourself your own injections?

A. No. My daughter sometimes -- nervous.

Q. Do you most of the time give it to yourself?

A. No, my daughter --

Q. How much do you have to take a day?

A. 60 units.

Q. Do you test your urine every day?

A. No.

Q. How often do you test your urine?

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A. (Someone else is in the room and answers this.) She might do it once a month because she doesn't have the time or something like that and she don't take the shots.

Q. Do you understand and have they told you and do you know how important it is to take care of your feet?

A. Yes.

Q. Who cuts your toenails?

A. Me.

Q. Are you on a diet?

A. Yes.

Q. The diet you're on -- is it ordinary foods that you have in the house or did you have to buy special foods?

A. Some special foods.

Q. How long have you had diabetes?

A. 15 years.

Q. Is there anything else -- how do you get to this clinic?

A. On the bus.

Q. You've been here all day. What time did you come this morning?

A. About 8:00.

Q. It is 11:50 now. What time do you usually get home when you have to come to this clinic?

A. Sometimes I get home 3:00 in the afternoon. Sometimes it be 4:30.

Q. What do you do about lunch?

A. Go downstairs and eat.

Q. You go to the cafeteria, O.K. Are there any other problems that you can think of that this has caused you that you'd like to tell us about?

A. No.

Q. Do you have good feeling in your feet? I mean, if you step on a rock or tack, can you feel that?

A. Oh yeah.

Q. Any numbness?

A. No. (She gets pretty weak sometimes.)

Q. You say you get weak sometimes. Is this after your insulin?

A. She gets delirious, nervous, and weak.

Q. Do you tell your doctor this?

A. Never told him. I had a stroke a long time ago, what's called a sunstroke.

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INTERVIEW #7

Q. How old are you?

A. 54.

Q. How much do you weigh?

A. I weigh 195.

Q. How far away from this clinic do you live?

A. 35 miles.

Q. How do you get here to the clinic?

A. I come in a car with a group of people.

Q. But you come with a group of people? Do they always bring you?

A. They coming to work and I go along.

Q. How do you get home?

A. When they get off work -- about 5:00.

Q. That means that you're in this clinic all day long. What time do you get here in the morning?

A. About 7:00.

Q. Does this create any problems for you having to spend a whole day here?

A. I have to get up early and be away from home all day.

Q. How long have you been coming here?

A. I just started coming back here about two weeks ago -- I live out in the country so far.

Q. Do you know about the satellite clinics that are out in the area?

A. Yes, sir.

Q. Do you have any other medical problems? Like high blood pressure?

A. High blood pressure.

Q. What types of medication are you on? Other than what you're taking for your diabetes? Are you taking high blood pressure medicine?

A. Yes.

Q. Anything else?

A. Some kind of pills but I don't know what it was.

Q. Are you on a diet?

A. Yes.

Q. This is something we're really interested in in trying to implement ways of understanding diets better sometimes. At this particular clinic they have a workgroup that works with all of you patients. I know that but did they give you a printed diet?

A. Yes, sir.

Q. Did you understand that diet and how to follow it?

A. I tried the best I could to but it's hard to buy all those foods.

Q. Could you see that print with your eyes?

A. My eyes.

Q. You say it was difficult. Was this the exchange type where they give you a group of foods that you can pick from?

A. Yes.

Q. Did you find that when they gave you that diet that that was the kind of foods that you and your family ordinarily eat?

A. Yes.

Q. It had everything on there that you liked to eat?

A. In a way --

Q. We're trying to find if these diets could take care if there are foods on that diet that you had at home without creating some problem of you having to buy extra foods. Some people can't afford to do that, they have to eat what they've got at home. Are you sticking to your diet pretty good?

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A. Yes.

Q. Do you ever slip?

A. Sometimes.

Q. When you do, do you ever tell your doctor you do this?

A. Well, I don't tell him.

Q. Have you ever found yourself doing this, that when you have an appointment, let's say like today, that you may be just kind of loose on your diet until three or four days before you come to the clinic and then maybe get on sort of a strict diet til you come in here? Have you ever really done that?

A. Sure have.

Q. I would like to ask you what you think about your testing of your urine. Do you test that routinely every day?

A. Yes.

Q. Do you test it first thing in the morning or do you wait when you go to the bathroom and go back later on and test the second time?

A. I do it the second time.

Q. Do you use a dip stick?

A. Yes.

Q. Is it clear, do you understand that when that thing shows up 4+ what that means?

A. Well, it changes.

Q. You understand what it means when it's up that high?

A. Yes.

Q. Do you know what to do about your medication when it goes or who you should get in touch with?

A. No.

Q. If it goes to 4+ you just leave it there?

A. Yes.

Q. Does it ever go up that high?

A. Oh yes, sir. I can't get it down a lot a times, sometimes it drops to 3+.

Q. What kind of medications are you on to treat your diabetes?

A. 100.

Q. U100 insulin. How much of that do you have to take?

A. They told me to take it twice a day these two weeks -- 25 in the morning and 25 in the evening.

Q. Do you give yourself your own shots?

A. Yes.

Q. Do you use a disposable syringe? Or the one that you sterilize?

A. One you sterilize.

Q. You do sterilize your own and use it over and over again?

A. Yes.

Q. Do you have any problems of getting your insulin?

A. I can't get it in the clinic.

Q. They won't give it to you in the clinic?

A. I have to buy it.

Q. Are you on any kind of health plan to pay for it or does that have to come out of your pocket?

A. Sometimes on my medical card --

Q. That's interesting, they'll let you get the insulin but what about the syringe, you can't get the needles?

A. I can get the needles.

Q. How long have you had diabetes?

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A. About five years.

Q. Do you have any problems with your feet or do you understand why it's necessary to take care of them?

A. Sometimes in the evening they swell up.

Q. Do they burn?

A. Yes. My toes.

Q. Do you ever have any numbness in them?

A. No.

Q. If you stepped on a rock or a tack, you'd know it?

A. Yes.

INTERVIEW #8

Q. What happened to your foot?

A. I had an ingrown toenail and it kept flamin' out and flamin' out and that turned to gangrene.

Q. (I want to start off that way because that would tell us why we couldn't get you on the scales.)

How long have you had diabetes?

A. Well, I just found out this year.

Q. How old are you?

A. I'm 65 years old.

Q. When I say where do you live, how far away from this clinic do you live?

Q. Is that in the city?

A. Yes.

Q. How do you get here to the clinic?

A. Well, they send buses. They come to pick me up.

Q. Do they take you home?

A. Yes.

Q. What time did you come to the clinic this morning?

A. They supposed to pick me up at 10 o'clock this morning but they picked me up at 11 o'clock and so . . .

Q. What time will you get home this afternoon?

A. Well, sir, I've been here since noon.

Q. What type of medication are you on? Do you have any other conditions other than your diabetes? Like high blood pressure?

A. Well, I suffer with the high blood pressure. I didn't find out til I had this complaint. The doctor give me pills.

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Q. You taking a pill for your diabetes?

A. Yes, sir.

Q. Do you have someone go to the drugstore and get the pills for you or do you get them?

A. I'm on medical care.

Q. O.K. So you have it paid for you, you have the care and all?

A. Yes, sir.

Q. Since you lost your legs, how do you get your medication, does someone go pick it up for you?

A. No. I got a little box sittin' in my door, a little hole outside my door, and the mailman drop my mail in the hole and I get it at that box.

Q. Do you cook your own meals?

A. Sure.

Q. Do you live by yourself or do you have a family?

A. I got sisters and brothers and nieces and things.

Q. You cook your own meals?

A. I cook my own meals.

Q. Are you on a diet? Can you follow that diet?

A. Sure I follow that diet. My food gonna be crazy.

Q. Do you have to buy special foods for your diabetic diet?

A. Yes.

Q. Do you ever cheat on it? Eat a piece of cake?

A. They don't allow no cake.

Q. I know, but do you ever get yourself a piece?

A. No, unh unh.

Q. There would be certain ways that you would feel when your blood sugar gets too low. Do you understand what those symptoms are? How you might feel if you were getting too low blood sugar?

A. I feel like you get drunk and you get blind and you just cain't see.

Q. If you feel those problems that can occur?

A. Then you lay down and be quiet.

Q. Do you test your urine every day?

A. Uh huh.

Q. Do you test the first time you go to the bathroom or do you test that second time?

A. I have to use a bed pan. I use sticks.

Q. But the first time you go in the morning or after that?

A. First time I go in the morning, I throw that away. Second time, I use that.

Q. Do you ever run 4+?

A. Oh yes. Oh, I be sick then.

Q. When it goes up that high, do you get in touch with your doctor?

A. ?

Q. Do you understand why the doctor now will be wanting to see you on a routine basis?

A. Uh huh.

Q. He's trying to keep your blood sugar down. Anything else now that you might want to tell us. I know it's caused you problems and you did tell me that you had ingrown toenails that got inflamed and then got infected and did this happen on both of your legs and gangrene set in?

A. Uh huh.

Q. How long ago was that?

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A. Well, it been about -- this right leg it was took off about seven year before this here one was took off. And this here leg was took off about eight years because the snow was on the ground and the porch was high. I called the doctor and he said I can't do nothing for the leg. X-ray. We gonna cut your leg off above your ankle.

Q. You said you had gangrene in your leg and toes seven or eight years ago but you've just this year become diabetic?

A. Um hum.

Q. I appreciate you contributing this and maybe it will help someone later on.

INTERVIEW #9

Q. How far do you live from here?

A. About 150 miles.

Q. How often do you come to this clinic?

A. Well, lately every month. But last month I got messed up and I had to call back in for an appointment, I have been feeling awful rugged. I wasn't even able to cook my own meal or nothing. I live alone.

Q. How old are you?

A. 53.

Q. How much do you weigh?

A. 131.

Q. You look like your weight's in excellent condition. Have they put you on a special diet?

A. Yes, I'm on a 1800 calorie diet.

Q. When they gave you that diet, that sheet of paper, did you understand?

A. Well, I understand now pretty good but I didn't know in the beginning.

Q. We have an excellent group here who can work with folks and explain those kinds of things.

A. She really did with me.

Q. You get to this clinic once a month, 150 miles away. How do you get here?

A. On the Greyhound bus. That's what makes it so hard on me. Now last night I left at 7:45, I had to change buses and lay over one hour and one-half and then I got here about 12:20 and I had to sit there until about 8:00 this morning.

Q. You got to the bus station at midnight and you sat there?

A. I had nowhere to go and I sit there and of course I was afraid and then I come to the hospital.

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Q. How'd you get from the bus station here?

A. I walked.

Q. How many blocks is that?

A. Ten blocks.

Q. How you going to get home?

A. I guess I'll catch a streetcar and go to the bus station. If I miss this bus at 3:00 then I don't have another way out until 5:00 in the morning. It's just hard. This almost puts me in bed for three or four days because I'm very weak.

Q. Are there no people in your local area that you can go to?

A. Nobody.

Q. When you get up to go to the bathroom in the morning, do you test the first time or do you wait?

A. Usually always get the second, sometimes the third.

Q. Every day?

A. Yes. I use the Clinitest tablets.

Q. Do you have any other medical problems? Blood pressure?

A. Addison's disease. That's why these spots are on my hands and face.

Q. How long have you had diabetes?

A. All my life the doctor says.

All my mother's people had it.

Q. You are now, I presume, taking insulin?

A. Yes.

Q. How much do you take?

A. I take 34 units of one and 100 of the cc and I take six units of the other. Before breakfast about 30 minutes.

Q. You take it yourself?

A. Yes.

Q. Do you use disposable syringe?

A. Yes.

Q. How do you pay for your medication?

A. I get a social security check and that's the onliest way in the world I'm gettin' by.

Q. Do you work?

A. I can't.

Q. Medically you're not able to?

A. I'm just not able to. I can't hardly do what I have to in the house.

Q. Who prepares your meals?

A. I do. Sometimes nothing but a sandwich, but if I'm able I'll try to cook something and I'll cook enough for three or four days and put it in the refrigerator.

Q. You have a bandaid on?

A. Yes, the doctor needs to look at that. It's very sore and it hurts very bad. It's been on there for six weeks. This one was bad twice but now it's feelin' better and this one is actin' up.

Q. Have they told you here in the clinic how important it is to take care of your feet?

A. Yes.

Q. Do you cut your own toenails?

A. Yes.

Q. Do you keep them as trimmed as you can?

A. This one Doctor, I don't know, it ripped and I kept trying to cut it off and I know I got it too short.

Q. I don't want you to take that off now because I want to wait til your doctor comes and let him see that. I just want to ask you

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about this. It's important that you take care of them and I'm sure they've been teaching you that.

A. I sure have a lot of trouble with my feet.

Q. Do they ever burn?

A. No.

Q. If you'd step on a rock or a nail, you'd know it?

A. Oh, yes Lord!

Q. I just wanted to make sure there was feeling in them. Any problems with your eyes?

A. Yes. My eyes are bad. They're awful weak. I have trouble getting the right amount of insulin in my syringe. If I didn't put my glasses on, I could never take it. I couldn't put the needle if my life depended on it, without my glasses.

Q. You told me that you are on a diet. Does this require you to buy special foods or do you have to eat what you've got at home?

A. A lot of times I have to eat what I have at home, but I do try to buy a lot that is special for myself.

Q. Sometimes with money as tight as it is --

A. I know what you mean and I know I have to do that too, but not as bad as I was for awhile.

Q. You have had diabetes all your life which has been between 40 and 50 years, as long as you remember?

A. Uh huh.

Q. You are on insulin and you are having to purchase that --

A. My card pays for my insulin and it pays for my cough syrup.

Q. What other medication are you on?

A. I'm on high cortizone and I'm on Lutholon F's. Now those three, I can't do without, but now the other medicine, I have a terrible headache and I've had that all my life too and my card doesn't pay for it. I have to pay for it and for my needles and my alcohol and

my cotton and my milk of magnesia and stuff like that I have to pay for.

Q. All out of the social security check?

A. Right.

Q. Well, this is what we wanted to know and I appreciate your being as free and telling us all that you have about this and we hope that maybe something could be done in the future.

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LIST OF INDIVIDUALS AND INDUSTRIAL COMPANIES SUBMITTING LETTERS

Letters were received by the Commission from individuals and from representatives of industrial companies. Some were requested by the Commission, other were sent in on the author's own initiative. The letters express views relating to the work of the Commission, but were not part of the scheduled Public Hearings.

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Biographical Sketches

Introduction

The scope of the Commission's task was vast and complex, To formulate a long-range plan to combat diabetes, a comprehensive survey was necessary to assess the magnitude, the epidemiology, the economic and social consequences, and the progress of scientific research of diabetes. Such a survey required a multidisciplinary approach which would take into account not only all subject matter, but also all prespective participants in the plan - the patients, the health care professionals, and the public. Therefore, in gathering and reporting the data, the Commission asked the cooperation of knowledgeable persons and organizations representing all the fields related to diabetes research and health care. Input came from biochemists, physiologists, practicing physicians, nutritionists, nurses, educators, administrators, lawyers, psychologists, social workers, representatives of pharmaceutical companies, and politically knowledgeable persons, to mention a few.

Nearly three hundred of the most highly qualified persons in the United States and Western Europe directly contributed to the task either by committee research work or papers presented at scientific sessions of the Commission meetings. The importance of the undertaking and the spirit of cooperation are reflected in the immediate response of all persons and by the fact that although time was short, no one refused to participate. Brief synopses of consultants' curriculum vitae are included in this report.

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LLOYD M. AIELLD, M.D. -- Director, William P. Beetham Eye Research and Treatment Unit, Joslin Diabetic Foundation since 1971; Clinical Instructor in Opthalmology, Harvard Medical School since 1965.

A.B., Harvard College 1954; M.D., Boston University Medical School 1960; Internship, Greenwich Hospital 196D-61; Residency, Massachusetts Eye and Ear Infirmary 1962-64; American Board of Ophthalmology 1966.

Associate Surgeon in Ophthamology, Massachusetts Eye and Ear Infirmary 1964-; Research Associate, Joslin Research Laboratory 1971-.

Member: American Academy of Ophthalmology and Otolaryngology.

ANTHONY MICHAEL ALBISSER, Ph.D. -- Investigator, Department of Surgery, the Research Institute, Hospital for Sick Children, Toronto since 1975; Adjunct Professor of Applied Science and Engineering, University of Toronto since 1975.

B. Eng., McGill University 1964; M.A. Sc., University of Toronto 1966; Ph.D., University of Toronto 1968.

Associate Director 1968, Director 1971, Department of Medical Engineering, Hospital for Sick Children; Assistant Professor of Electrical Engineering, University of Toronto 1972-75.

Member: American Cybernetics Society; Phi Epsilon Alpha 1964.

MARIA T. ALOGNA, B.S.N. -- Diabetes Teaching Nurse, Emory School of Medicine since 1972.

B.S.N., University of Connecticut School of Nursing 1969.

Staff Nurse, Thoracic-Surgery, Yale New Haven Medical Center 1969; Volunteer Nurse, Casualty Staging Facility, Yokota, Air Force Base 1969-70; Public Health Nurse, Burlington County, Mt. Holly, New Jersey 1970-71; Co-Director of the Sixth Allied Health Postgraduate Course of American Diabetes Assn. 1974.

Member: American Diabetes Assn., Committee on Diabetes Education Centers and Systems; American Heart Assn.

ROBERT SPENCER ANDERSON, M.D. -- Vice President for Health Services, Meharry Medical College since 1972; Professor of Medicine, Meharry Medical College since 1960.

B.A., Lincoln University 1946; M.D., Meharry Medical College 1946; Internship, Harlem Hospital 1946-47; Residency, George W. Hubbard Hospital 1947-5D; Fellow, George W. Hubbard Hospital 195D-51; Fellow, College of Physicians and Surgeons 1952-53; American Board of Internal Medicine 1954; National Board of Medical Examiners 1947.

Instructor in Medicine 195D-51, Associate Professor of Medicine 1954-6D, G. W. Hubbard Hospital of Meharry Medical College; Junior Attending Physician 195D-52, Acting Medical Director 1958-60, Attending Physician 1953-, Director, Fisk-Meharry Student Health Center 1965-71, G. W. Hubbard Hospital; Chairman, Department of Internal Medicine 196D-69, Director, Comprehensive Health Service Program 1969-72, Meharry Medical College.

Member: American Heart Assn.; Fellow, American College of Physicians; AMA; American Diabetes Assn.; American Society of Nuclear Medicine; National Medical Assn.; American Public Health Assn.; Kappa Pi; Alpha Omega Alpha.

REUBIN ANDRES, M.D. -- Chief, Metabolism Section, NIH since 1962; Chief, Clinical Physiology Branch, National Institute of Child Health and Human Development since 1969; Assistant Chief, Gerontology Research Center, National Institute of Child Health and Human Development since 1965.

M.D., Southwestern Medical College 1944; Internship, Gallinger Municipal Hospital 1945; Residency, VA Hospital, McKinney 1947-50; Research Fellow, Johns Hopkins University Department of Medicine 195D-55; American Board of Internal Medicine 1952.

Instructor in Medicine 1955-58, Assistant Professor of Medicine 1958-62, Associate Professor of Medicine 1962-, Johns Hopkins University Department of Medicine; Assitant Professor, School of Hygiene and Public Health, Department of Environmental Medicine, Johns Hopkins University 1955-59; Assistant Professor, Department of Medicine, University of Maryland 1958-62; Assistant Chief of Medicine, Baltimore City Hospitals 1958-62.

Member: American Physiological Society; American Society for Clinical Investigation, American Federation for Clinical Research; American Diabetes Assn.; Endocrine Society; American Assn. for the Advancement of Science; Gerontological Society; American Geriatrics Society; Associate Editor, Journal of Gerontology 1967-68.

ROBERT J. ARMSTRONG -- Chief, Mortality Statistics Branch, Division of Vital Statistics, National Center for Health Statistics since 1971.

B.A., City College of New York 1953; M.S., Columbia University 1959.

Statistician, New York State Department of Health 1957-61; Statisticain, New York Department of Commerce 1961-62; Statistician, Mortality Statistics Branch, Division of Vital Statistics, National Center for Health Statistics 1966-71.

ARTHUR K. ASBURY, M.D. -- Professor and Chairman, Department of Neurology, University of Pennsylvania School of Medicine since 1974.

B.S., University of Kentucky 1951; M.D., University of Cincinnati 1958; Internship 1958-59, Residency 1959-63, Massachusetts General Hospital; Teaching Fellow, Harvard Medical Scholl 1960-63; Research and Clinical Fellow, Massachusetts General Hospital 1963-65; Research Fellow, Harvard Medical School 1963-65; American Board of Psychiatry and Neurology 1967.

Assistant in Neurology 1965-67, Assistant Neurologist 1967-68, Associate Neurologist 1968-69, Massachusetts General Hospital; Associate in Pathology, Beth Israel Hospital 1966-69; Instructor in Neurology 1965-68, Associate in Neurology 1968-69, Harvard Medical School; Associate Professor and Vice Chairman, Department of Neurology 1969-73, Professor of Neurology 1973-74, University of California, San Francisco; Chief, Nurological Service VA Hospital, San Francisco.

Member: American Neurological Assn.; Fellow, American Academy of Neurology; American Assn. of Neuropathologists; Society of Neuroscience; American Heart Assn.; Editor, American Lectures in Neurology Series.

JOSEPH AVRUCH, M.D. -- Assistant Professor of Medicine, Harvard Medical School, Assistant in Medicine, Massachusetts General Hospital since 1972.

B.S., Brooklyn College 1961; M.D., Washington University School of Medicine 1965; Internship 1965-66, Residency 1968-69, 1971-72, Barnes Hospital; Research Fellow, Harvard Medical School, Massachusetts General Hospital 1969-71; American Board of Internal Medicine 1972.

Clinical Associate, Metabolism Section, Gerontology Research Center, National Institutes of Child Health and Human Development, NIH 1966-68; Instructor in Medicine, Washington University School of Medicine, Washington University School of Medicine 1971-72.

Member: Alpha Omega Alpha 1965.

HERBERT M. BAGANZ, M.D. -- Assistant Chief Medical Director, Department of Medicine and Surgery, Veterans Administration since 1975.

M.D., University of Pennsylvania School of Medicine 1947; American Board of Internal Medicine 1954.

Private Practice of Internal Medicine and Cardiology for 20 years; 1951-71; Secretary, Department of Health and Social Services, State of Delaware 1972-73; Visiting Associate Professor of Medicine, Jefferson Medical College; Chief of Medical Service, VA Center, Wilmington 1973-74; Board of Trustees, Blue Cross and Blue Shield of Delaware, Inc. 1974.

Member: Fellow, American College of Cardiology; Fellow and Governor, American College of Physicians; Medical Society of Delaware, President 1971-72; Delaware Diabetes Assn., President 1963-65; Delaware Society of Internal Medicine, President 1960-62; Delaware Division American Cancer Society, President 1969-72.

LESTER BAKER, M.D. -- Director, Clinical Research Center since 1970; Associate Professor of Pediatrics, Department of Pediatrics, University of Pennsylvania School of Medicine since 1970.

A.B., Columbia College 1951; School of Law and Higher Studies, University of Paris 1952; M.D. College of Physicians and Surgeons, Columbia University 1959; Internship 1959-60, Residency 1960-62, NIH Research Trainee 1962-65, Hospital of the University of Pennsylvania; American Board of Pediatrics 1964.

Instructor in Pediatrics 1962-66, Assistant Professor of Pediatrics 1966-70, Assistant Physician 1965-66, Associate Physician 1966-71, Assistant Director Clinical Research Center 1965-70 at Children's Hospital of Philadelphia; Research Staff since 1965, Senior Physician since 1971, Children's Hospital of Philadelphia.

Member: American Federation for Clinical Research; Society for Pediatric Research, American Diabetes Assn.; American Board of Pediatrics; Lawson Wilkins Pediatric Endocrine Society/ Alpha Omega Alpha; Phi Beta Kappa; Editorial Board, Diabetes Magazine 1974-76.

JUDITH MARIE BALLARD, B.A. -- Conference Manager, Medical Service Consultants, Inc. since 1975.

B.A., Wayne State University 1971; Wayne State University Board of Governors Scholarship 1970.

Junior Conference Coordinator, McGregor Memorial Conference Center, Wayne State University 1964-69; Supervisor of Conferences, Administrative Aide to Dean of Special Services, Community Services Division, Special Services Department, Oakland Community College 1969-70; Staff Research Assistant, Department of Library Science, Wayne State University 1971-72; Conference Coordinator, Conferences and Institutes Division, Office of Executive Development, University College, University of Maryland 1972-75.

ELMER J. BALLINTINE, M.D. -- Clinical Director, National Eye Institute, NIH.

B.S., Grove City College 1936; M.D., Case Western Reserve University 1949; Internship, Cleveland City Hospital 1949-50; American Board of Ophthalmology.

Assistant Ophthalmologist 1953-58, Clinical Instructor 1954-55, Senior Clinical Instructor 1955-58, Assistant Clinical Professor 1958-64, Case Western Reserve University; Associate Ophthalmologist, University Hospitals, Case Western Reserve University 1958-73; Associate Clinical Professor of Ophthalmology, Case Western Reserve University 1964-73.

Member: Assn. for Research in Vision and Ophthalmology; American Academy of Ophthalmology and Otolaryngology.

CLYDE FREDERICK BARKER, M.D. -- Professor of Surgery, School of Medicine, University of Pennsylvania since 1973; Chief, Surgical Section in Renal Transplantation, University of Pennsylvania Hospital since 1968.

B.A., Cornell University 1954, M.D., Cornell University Medical College 1958; Internship, University of Pennsylvania Hospital 1958-59; Residency, University of Pennsylvania Hospital 1959-64; Fellow, Harrison Department of Surgical Research 1959-64; Fellow in Vascular Surgery, University of Pennsylvania Hospital 1964-65; Fellow, USPHS in Medical Genetics, University of Pennsylvania School of Medicine 1965-66; Fellow, American Cancer Society 1961-62; American Board of Surgery 1965.

Assistant Instructor in Surgery 1959-63, Instructor in Surgery 1959-63, Instructor in Surgery 1963-64, Associate in Surgery 1964-68, Associate in Medical Genetics 1966-72, Assistant Professor of Surgery 1968-69, Associate Professor of Surgery 1969-73, University of Pennsylvania School of Medicine; Chairman, Interdepartmental Clinical Transplantation Committee 1966-, Assistant Chief of General Surgical Division B 1966-71, Associate Chief, Surgical Section in Peripheral Vascular Surgery 1971-, University of Pennsylvania Hospital.

Member: American Federation for Clinical Research; The Transplantation Society; American College of Surgeons; American Society of Artificial Internal Organs; International Cardiovascular Society; Society for Vascular Surgery; American Diabetes Assn.

JACK A. BARWIND, Ph.D. -- Assistant Professor of Communication Arts and Associate Director of Research, Acting Head of Oral Communication, Cornell University since 1969.

B.A., Carroll College 1965; M.A., Bowling Green State University 1966; Ph.D., Bowling Green State University 1969.

Instructor, Bowling Green State University 1966-67, (Summers); Teaching Fellow, Bowling Green State University 1966-68; Research Consultant, Ohio Bell Telephone Company 1968-69; Instructor in Speech, University of Toledo 1968-69.

Member: American Assn. for the Advancement of Science; International Communication Assn.; Speech Communication Assn.; Pi Kappa Delta; Alpha Psi Omega.

WILLIAM IRVING BAUER, M.D. -- Medical Director, Medical Service Consultants, Inc. since 1974; Assistant Clinical Professor, Department of Medicine, Georgetown University since 1972.

B.S. 1945, M.D. 1950, University of Michigan; Internship 1950-51, Residency 1951-55, University Hospital, Ann Arbor; American Board of Internal Medicine 1960.

Private Practice, Internal Medicine, Greeley Clinic 1956-73; Clinical Instructor of Medicine, University of Colorado Medical School 1965-73; Director, Department of Medicine, Project HOPE, Natal, Brazil 1972; Aviation Medical Examiner 1966- ; Examiner, Colorado State Rehabilitation Services 1965- ; Director, Office of Professional Standards Review 1973-74.

Member: Fellow, American College of Physicians, Fellow, American College of Chest Physicians.

ROBERT JOSEPH BEALL, Ph.D. -- Director, Metabolism Program, Extramural Programs, National Institute of Arthritis, Metabolism and Digestive Diseases, NIH since 1975.

B.S., Albright College 1965; M.A., State University of New York at Buffalo 1970; Ph.D., State University of New York at Buffalo 1970.

Instructor 1970-71, Assistant Professor 1971-74, Department of Physiology, Case Western Reserve University School of Medicine; Instructor in Physiology 1971-72, Assistant Professor 1972-75, Case Western Reserve University School of Dentistry; Grants Associate, Office of Grants Associates Division of Research Grants, NIH 1974-75.

Member: American Assn. for the Advancement of Science; American Society of Zoologists; Sigma Xi.

JOHN H. BENJAMIN -- Director, Division of Education, the Upjohn Company since 1974.

B.A., Gettysburg College 1958.

Salesperson, Upjohn Company 1962-67; District Manager of General Sales 1967-69, District Manager of Hospital Sales 1969-71, Sales Education and Promotion 1971-74, The Upjohn Company.

WILLIAM B. BENJAMIN, M.D. -- Associate Professor of Physiology and Biophysics, State University of New York since 1975.

A.B., Columbia College 1955; M.D. College of Physicians and Surgeons, Columbia University 1959; Internship, Mary Fletcher Hospital, University of Vermont 1959-60; Residency, Mount Sinai Hospital 1961-62, Francis Delafield Hospital, Columbia University 1963; Fellow, Institute of Cancer Research 1960-61, 1962-63; Fellow, Chester Beatty Research Institute, University of London 1964.

Instructor, Department of Medicine 1964-65, Associate, Department of Medicine 1965-68, Assistant Professor of Medicine 1968-69, College of Physicians and Surgeons, Columbia University; Assistant Professor of Medicine, University of Pennsylvania School of Medicine 1969-75.

Member: American Federation for Clinical Research; Biochemical Society; American Assn. for the Advancement of Science; American Society of Biological Chemistry; Assistant Editor, Annals of Internal Medicine 1971.

PETER HOWARD BENNETT, M.B., Ch.B. -- Chief, Epidemiology and Field Studies Branch, National Institute of Arthritis and Metabolic Diseases since 1970; Associate of Family and Community Medicine, College of Medicine, University of Arizona since 1970.

B.Sc., University of Manchester Medical School Manchester Royal Infirmary 1959; M.B., Ch.B., University of Manchester Medical School Manchester Royal 1961; Licentiate of the Royal College of Physicians 1962.

House Physician, Medical Professor Unit 1962, House Surgeon, University Department of Orthopaedic Surgery 1962-63, Manchester Royal Infirmary; Visiting Fellow, National Institute of Arthritis and Metabolic Diseases 1963, Clinical Associate, Arthritis and Gout Services, Clinical Center 1963, NIH; House Physician, Department of Medicine, Hammersmith Hospital and Postgraduate Medical School, London 1963-64; Arthritis and Rheumatism Council Research Fellow, Postgraduate Medical School, London 1964; House Physician, National Hospital for Nervous Diseases, 1964-68, Associate Chief, Clinical Field Studies Unit, Epidemiology and Field Studies Branch, NIH; Associate of Community Medicine 196B-69, Assistant of Community Medicine 1969-70, College of Medicine, University of Arizona; Acting Chief, Clinical Research Section, Digestive Diseases Branch since 1973, Acting Chief, Southwestern Field Studies Section, Epidemiology and Field Studies Branch since 1970, NIAMDD, Phoenix.

Member: American Assn. for the Advancement of Science; American Diabetes Assn.; American Rheumatism Assn.; British Medical Assn.; Royal College of Physicians; Royal College of Surgeons; International Epidemiological Assn.

HEINZ WERNER BERENDES, M.D. -- Chief, Contraceptive Evaluation Branch, Center for Population Research, National Institute of Child Health and Human Development since 1974; Acting Chief, Fertility Regulating Methods Evaluation Branch, Center for Population Research, National Institute for Child Health and Human Development since 1973.

M.D., University of Goettingen 1949; M.D., University of Munich 1952; M.E., Johns Hopkins University 1972; Internship, Abbott Hospital 1954, University of Minnesota Hospitals 1954; Residency, University of Minnesota Hospitals 1954-56.

Instructor, University of Minnesota Hospitals 1956-59; Assistant Professor of Pediatrics 1959-60, Head, Pediatric Out-Patient Clinic 1956-60, Project Director, Child Development Study, Collaborative Study 1957-60, University of Minnesota; Assistant Director, Collaborative Research, National Institute of Neurological Disease and Blindness 1960; Chief, Perinatal Research Branch, National Institute of Neurological Disease and Stroke 1960-73.

Member: American Society of Human Genetics; American Assn. on Mental Deficiency; American Assn. for the Advancement of Science; Society for Epidemiological Research.

SAMUEL P. BESSMAN, M.D. -- Professor and Chairman, Department of Pharmacology since 196B, Professor of Peidatrics, University of Southern California School of Medicine since 1969.

B.S., College of William and Mary 1941; M.D., Washington University Medical School 1944; Internship and Residency, Saint Louis Children's Hospital 1944-45; Fellow in Pediatric Research, Saint Louis Children's Hospital 1945; Fellow, Neuropsychiatric Institute 194B-49, Fellow Massachusetts General Hospital 1952-53; American Board of Pediatrics.

USPHS, Assistant Surgeon-Senior Assistant Surgeon Pathologist, Director of Laboratories, U.S. Marine Hospital, Norfolk 1946-4B; Instructor Peidatrics 194B-54, Assistant Clinical Professor of Pediatrics 1952-54, George Washington University; Director of Biochemical Research, Research Foundation of Children's Hospital 194B-54; Associate Professor of Pediatrics 1954-60, Associate Professor of Biochemistry 195B-65, Professor of Pediatric Research 1960-6B, Professor of Biochemistry 1965-6B, Chairman, Department of Developmental Medicine 1967-6B, University of Maryland Medical School; Director of Research, Jewish Home for Retarded Children, Washington, D.C. 1962-6B; Director of Research, Rosewood State Hospital 1962-6B; Senior Scientist, Pacific State Hospital.

Member: Fellow, American Academy of Pediatrics; American Society of Biological Chemists; Society for Pediatric Research; American Chemical Society; New York Academy of Sciences; The Biochemical Society; American Institute of Nutrition; Fellow, American Assn. for the Advancement of Science; The American Society for Artifical Internal Organs; Alpha Omega Alpha; Sigma Xi.

EDWIN L. BIERMAN, M.D. -- Chief, Metabolism Section, VA Hospital, Seattle since 1962; Head, Division of Metabolism and Gerontology, University of Washington School of Medicine since 1966; Professor of Medicine since 196B, University of Washington School of Medicine.

A.B., Brooklyn College 1951; M.D., Cornell University Medical College 1955; Internship 1955-56, Residency 1959-60, New York Hospital; American Board of Internal Medicine 1963; National Board of Medical Examiners 1963.

Assistant, Rockefeller Institute for Medical Research 1956-57; Assistant Physician, Rockefeller Institute Hospital 1956-57; Assistant Chief and Chief, Metabolic Research Division, U.S. Army Medical Research and Nutrition Lab 1957-59; Assistant Professor, Associate Physician, Rockefeller Institute Hospital 1960-62; Physician to Outpatients, New York Hospital 1960-62; Assistant Professor of Medicine 1962-63 and Associate Professor 1963-68, University of Washington School of Medicine; Director, Northwest Lipid Research Center 1971-73.

Member: American Federation for Clinical Research; American Diabetes Assn.; Endocrine Society; American College of Physicians; New York Academy of Sciences; American Society for Clinical Nutrition; Guggenheim Fellow 1972-73; Council on Arteriosclerosis, American Heart Assn.; Alpha Omega Alpha; Sigma Xi; Phi Beta Kappa.

F. MARIAN BISHOP, Ph.D., M.S.P.H. -- Professor and Chairman of Community Medicine, School of Primary Medical Care, University of Alabama since 1974; Professor, Department of Public Health and Epidemiology, School of Medicine, Brimingham since 1974.

B.A., Drury College 1949; M.A., University of Kansas 1950; M.A., Syracuse University 1952; M.S.P.H., University of Missouri 1966; Ph.D., Washington University 1954.

Visiting Professor, University of Maryland Overseas, Frankfurt 1957-5B; Professor, Community Health and Medical Practice, University of Missouri 1969-70; Professor, Departments of Community Health and Psychiatry and Behavioral Sciences, College of medicine 1970-71, Professor, Department of Human Ecology, College of Health and Allied Health 1972-74, Professor, Departments of Family Practice and Community Health and Psychiatry and Behavioral Sciences, College of Medicine 1972-74, University of Oklahoma Health Sciences Center.

COLIN C. BLAYDON, Ph.D. -- Associate Professor at Duke University and Principal of ICF, Inc.

B.E.E., University of Virginia 1962; Ph.D., Harvard University 1966.

Staff Assistant to Assistant Secretary of Defense 1966-69; Assistant Professor, Harvard Business School

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1969-73; Deputy Associate Director, Office of Management and Budget 1973-75.

Member: Atomic Energy Commission, Sigma Xi; Tau Beta Pi; Eta Kappa Nu.

BURIS R. BOSHELL, M.D. -- Medical Director, Diabetes Research and Education Hospital since 1964, and Professor since 1974, Department of Medicine, University of Alabama School of Medicine.

B.S., Alabama Polytechnic Institute 1949; M.D., Harvard Medical School 1953; Internship 1953-54; Residency 1954-56, 1958-59; Peter Bent Brigham Hospital; Research Fellow, Harvard Medical School 1956-58; American Board of Internal Medicine 1961.

Assistant in Medicine, Harvard Medical School 1956-57, Junior Associate Physician 1957-58; Assistant Director, Diabetes Teaching Unit 1957-58; Assistant in Medicine 1958-59; Harvard Medical School; Assistant Professor of Medicine 1959-62, Associate Professor of Medicine 1962-64, Assistant Director, Department of Medicine 1963-68, University of Alabama School of Medicine; Clinical Investigator, VA Hospital, Birmingham 1959-62; Chief, Medical Services, VA hospital 1962-68; Assistant Physician-in-Chief, University of Alabama Hospitals and Clinics 1963-68.

Member: American Federation for Clinical Research; Endocrine Society; American Diabetes Assn; Alabama Diabetes Assn., President 1962-63; Fellow, American College of Physicians; Fellow, American College of Clinical Pharmacology and Chemotherapy; Fellow, American Institute of Chemists; Sigma Xi; Omicron Delta Kappa; Phi Kappa Phi; Gamma Sigma Delta; Tau Kappa Alpha; Alpha Omega Alpha.

ROBERT F. BRADLEY, M.D. -- Medical Director, Joslin Clinic; Physician, New England Deaconess Hospital; Consultant in Medicine, Boston Hospital for Women; Associate Clinical Professor of Medicine, Peter Bent Brigham Hospital.

B.S., Yale University 1941; M.D., Yale University School of Medicine 1943; Internship, Vanderbilt University Hospital 1944; Fellow, Lahey Clinic 1946-49; Fellow, Joslin Clinic and New England Deaconess Hospital 1949; Internal Medicine Board 1952.

Member: Fellow, American College of Physicians; American Diabetes Assn., Board of Directors 1966-72; American Federation for Clinical Research; American Society of Internal Medicine; Massachusetts Medical Society; Massachusetts Society of Internal Medicine, President 1964-66; New England Diabetes Assn., President 1960-61.

GEORGE A. BRAY, M.D. -- Professor of Medicine, University of California at Los Angeles School of Medicine since 1972; Associate Chief of Metabolism, Division of Endocrinology and Metabolism, Director, Clinical Study Center, Harbor General Hospital since 1970.

A.B., Brown University 1953; M.D., Harvard Medical School 1957; Internship, Johns Hopkins Hospital 1957-58; Residency, Strong Memorial Hospital 1960-61; Fellow, National Science Foundation, National Institute for Medical Research, London 1961-62; NIH Fellow, New England Medical Center Hospitals 1962-64; National Board of Medical Examiners 1958; American Board of Internal Medicine 1967.

Assistant Professor of Medicine 1964-69, Associate Professor of Medicine 1969-70, Tufts University School of Medicine; Assistant Physician, 1964-69, Physician 1969-70, New England Medical Center Hospitals; Associate Professor of Medicine, Unversity of California at Los Angeles School of Medicine 1970-72.

Member: American Assn. for the Advancement of Science; Fellow, American College of Physicians; American Diabetes Assn.; American Federation for Clinical Research; American Institute for Nutrition; AMA; American Physiological Society; American Society for Clinical Investigation; American Society for Clinical Nutrition; Endocrine Society; Alpha Omega Alpha 1957; Sigma Xi 1952; Phi Beta Kappa 1952; Boylston Society 1956; Editorial Board, Addictive Behaviors 1975, Metabolism 1969.

GARY BROOKER, Ph.D -- Associate Professor of Pharmacology, Department of Pharmacology, University of Virginia School of Medicine since 1972; Associate Director, Acting Director, Diabetes-Endocrinology Research Center, University of Virginia 1975-76.

B.S. 1966, Ph.D. 1968, University of Southern California.

Assistant Professor of Medicine 1968-72, Consultant in Internal Medicine 1969-72, Assistant Professor of Biochemistry 1969-72, Departments of Medicine and Biochemistry, University of Southern California.

Member: American Assn. for the Advancement of Science; American Federation for Clinical Research; American Society for Pharmacology and Experimental Therapeutics; American Society of Biological Chemist; International Study Group for Research in Cardiac Metabolism; Co-Editor-in-Chief: Journal of Cyclic Nucleotide Research.

GEORGE T. BROOKS, Ph.D. -- Associate Director for Extramural Program Activities, National Institute of Arthritis, Metabolism, and Digestive Diseases since 1974.

B.A. 1945, M.A. 1947, Ph.D. 1949, University of Kansas.

Training Consultant, National Institute of Child Health and Human Development 1963-65; Hematology Program Director, National Institute of Arthritis, Metabolism, and Digestive Diseases 1965-66; Chief, Latin American Office, NIH 1966-69; Deputy Director, Division of Research Grants, NIH 1969-71; Associate Director for Extramural Programs, National Eye Institute 1971-74.

Member: Entomological Society of America; Sigma Xi, Phi Sigma.

MELVA BURT, M.S. -- Executive Director, American Diabetes Assn., Kansas Affiliate, Inc. since 1972; Consultant in Developing Leadership in Supervisory Management, Washington University since 1974.

B.S., Northeastern State College 1959; M.S., University of Arkansas 1968.

Family and Child Development Teacher, Southeast High School, Wichita 1965-67; Child Development Laboratory, University of Arkansas 1967-68; Director Head Start, Wichita 1968-69; Coordinator of Community Coordinated Child Care 1969-72.

Member: National Council on Family Relations; American Diabetes Assn.

GEORGE FRANCIS CAHILL, JR., M.D. -- Director, Joslin Research Laboratories since 1962; Professor of Medicine, Harvard University School of Medicine since 1970.

B.S., Yale University 1949; M.D., Columbia University College of Physicians and Surgeons 1953; Residency, Peter Bent Brigham Hospital 1957-58; Research Fellow, Harvard University Medical School 1955-57; Fellow, Medical Foundation, Inc. 1959-62; American Board of Internal Medicine on Endocrinology and Metabolism 1970.

House Officer 1953-55, Assistant in Medicine 1955-57, 1962-65, Junior Associate in Medicine 1959-62, Associate in Medicine 1962-65, Senior Associate in Medicine 1966-68, Physician 1968-, Peter Bent Brigham Hospital; Instructor in Medicine 1958-59, Associate in Medicine 1959-62, Assistant Professor of Medicine 1962-65, Associate Professor of Medicine 1966-70, Harvard University Medical School; Consultant in Medicine, University of Connecticut School of Medicine 1972-.

Member: American Physiological Society; American Federation for Clinical Research; American Diabetes Assn., President 1975-76; American Society for Experimental Biology and Medicine; Boylston Society, President 1968-69; Sigma Xi 1949; Alpha Omega Alpha 1952; Associate Editor, Journal of Clinical Investigation 1962-67; Editorial Boards; Journal of Clinical Endocrinology and Metabolism 1963-70, Journal of Lipid Research 1964-, Diabetes 1966-, New England Journal of Medicine 1973-, American Journal of Physiology 1974-.

BARBARA KELLEY CANNON Research Associate, Kappa Systems, Inc. since 1974.

B.A., University of Maryland 1975.

Elementary Teacher, Dmaha Public Schools 1957-61; Elementary Teacher, Concord Hill School 1967-71; Assisting Teacher, Headstart Program 1971.

ELSIE REID CARRINGTDN, M.D. -- Professor and Chairman, Department of Obstetrics and Gynecology, Medical College of Pennsylvania since 1967.

A.B., Wheaton College 1933; M.D., Temple University School of Medicine 1941; M.S., Temple University School of Medicine 1949; Internship, Temple University Hospital 1941-43; Residency, Temple University School of Medicine and Hospital 1943-45, 1948-49; American Board of Dbstetrics and Gynecology 195D.

Instructor 1949-51, Assistant Professor 1951-58, Associate Professor 1958-61, Department of Dbstetrics and Gynecology, Temple University School of Medicine; Hospital Medical Director of Maternal and Infant Care Project 1965-69, Research Professor, Department of Obstetrics and Gynecology 1961-65, Professor, Department of Dbstetrics and Gynecology 1965-67, Woman's Medical College of Pennsylvania; Chief of Woman's Medical College Division, Dbstetrics and Gynecology, Philadelphia General Hospital 1961-66.

Member: American Assn. of Dbstetricians and Gynecologists; American College of Obstetricians and Gynecologists; American Fertility Society; American Medical Society; International Fertility Assn.; Dbstetrical Society of Philadelphia, President 1969-7D; Alpha Omega Alpha, President Delta Chapter 1974; Society for the Study of Reproduction; Editorial Board, Obstetrics and Gynecology 1972-.

WILLIAM LOUIS CHICK, M.D. -- Professor of Medicine, Peter Bent Brigham Hospital since 1972; Assistant Professor of Medicine, Harvard Medical School since 1972.

B.A., Columbia College 1959; M.D., New York University School of Medicine 1963; Internship, Yale-New Haven Hospital 1963-64· Residency, New York University Medical Center 1964-67; Research Fellow in Medicine, Harvard Medical School 1967-69, Research Fellow in Medicine, Peter Bent Brigham Hospital 1967-69; Instructor in Medicine, Harvard Medical School 1969-72; Junior Associate in Medicine, Peter Bent Brigham Hospital.

Member: American Diabetes Assn.; American Assn. for the Advancement of Science; American Physiological Society; Phi Beta Kappa; Alpha Dmega Alpha.

BARBARA G.B. CHRISTMAN, M.S.N. -- Assistant Professor of Medical Surgical Nursing at Vanderbilt University School of Nursing since 1974; Clinical Specialist at Vanderbilt Medical Center for Diabetes Education since 1971.

B.S.N., University of Michigan 1968; M.S.N., Vanderbilt University 1971.

Graduate Nurse Technician at VA Hospital in Ann Arbor 1968; Public Health Nurse II at Williamson County Health Department in Franklin, Tennessee 1968-70; Diabetes Nurse for Tennessee Mid South/Regional Medical Program, Diabetes Education Program 1971-74; Instructor of Medical Surgical Nursing at Vanderbilt University School of Nursing 1971-74. Consultant: Department of Public Health Dietitians, for the State of Tennessee 1970; Senior Citizens, Nashville, Tennessee, Committee on Multiphasic Screening 1972; Tennessee Department of Public Health, on Organizing Diabetes Education Programs 1974.

Member: American Assn. of Diabetes Educators.

LELAND CHARLES CLARK, JR., Ph.D. -- Professor of Research Pediatrics, University of Cincinnati College of Medicine since 1968; Director, Division of Neurophysiology, Children's Hospital Research Foundation since 1968.

B.S., Antioch College 1941; Ph.D., University of Rochester School of Medicine 1944.

Research Associate, Chairman, Biochemistry Department, Fels Research Institute 1944-58; Assistant Professor of Biochemistry 1944-56, Professor of Biochemistry 1956-58, Antioch College; Senior Research Associate in Pediatrics and Surgery, University of Cincinnati College of Meidince 1955-58; Associate Professor of Biochemistry 1958-61, Professor of Biochemistry 1961-68, Department of Surgery, University of Alabama Medical College.

Member: American Assn. for the Advancement of Science; American Heart Assn.; American Cancer Society; American Chemical Society; American Institute of Chemist; American Physiological Society; American Society for Artificial Internal Drgans; Federation of American Scientist; New York Academy of Sciences; Phi Beta Pi-Theta Kappa Psi; Sigma Xi.

DAVID G. CDGAN, M.D. -- Consultant, National Eye Institute, NIH since 1973; Consultant, Children's Hospital Medical Center, Boston since 1954.

A.B., Dartmouth College 1929; M.D., Harvard Medical School 1932; Internship, Chicago University Clinics 1932-33; Residency, Massachusett Eye and Ear Infirmary 1933-35; American Board of Ophthalmology 1937.

Assistant Surgeon in Ophthalmology 1939-45, Associate Surgeon in Ophthalmology 1945-54, Director of Ophthalmic Laboratories 1947-56, Director of the Eye Pathology Laboratory 1954-56, Chief of Ophthalmology 1962-68, Massachusetts Eye and Ear Infirmary; Assistant Professor of Ophthalmic Research 1940-43, Acting Director, Howe Laboratory of Ophthalmology 1940-43, Director, Howe Laboratory of Dphthalmology 1943-73, Associate Professor of Ophthalmic REsearch 1943-55, Professor of Opthalmic Research 1955-74, Head, Department of Ophthalmology 1962-68, Harvard Medical School.

Membership: American Academy of Arts and Sciences; American Neurological Assn.; American Academy of Ophthalmology and Otolaryngology; American Ophthalmological Society; American Society for Clinical Research; Assn. for Research in Vision and Ophthalmology; National Society for the Prevention of Blindness; Editorial Board, Archives of Ophthalmology 1941-6D; Chief Editor, 196D-66; Editorial Board, Investigative Ophthalmology: Editor, Albrecht Von Graefes Archiv Fur Klinische Und Experimentelle Ophthalmologie 1972-.

D. WALTER CDHEN, D.D.S. -- Dean, School of Dental Medicine, University of Pennsylvania since 1972; Clinical Professor of Medicine, Medical College of Pennsylvania since 1973.

D.D.S., University of Pennsylvania, School of Dentistry 1950; Research Fellow in Pathology and Periodontics, Beth Israel Hospital 195D-51; American Board of Periodontology 1956.

University of Pennsylvania; Instructor in Oral Medicine and Dral Histopathology 1952-54, Associate in Oral Medicine and Dral Histopathology, 1954-56, Assistant Professor of Oral Medicine and Oral Histopathology 1956-59, Associate Professor of Oral Histology, Pathology and Oral Medicine and Director of Periodontia, School of Dentistry 1959-63; Assistant Professor of Periodontology and Vice Chairman of the Department, Graduate School of Medicine 1955-59; Associate Professor of Periodontology and Co-Chairman of Department, Graduate School of Medicine 1959-63, Professor of Periodontics and Chairman, Division of Graduate Medicine 1963-67, Professor of Periodontics and Chairman of Department, School of Dental Medicine 1963-, Associate Dean for Academic Affairs, School of Dental Medicine 1969-72; Chief, Periodontics, Philadelphia General Hospital 1951-, Clinical Assistant in Periodontics, Albert Einstein Medical Center 1953-.

Member: American Dental Assn.; Fellow, American Academy of Dral Pathology; American Assn. for the Advancement of Science; Fellow, Royal Society of Health; International Assn. for Dental Research; New York Academy of Science; American Academy of Periodontology; Academy of Stomatology; Omicron Kappa Upsilon; Sigma Xi; Scientific Editor, ALPHA OMEGAN 1961-64; Editorial Staff, Current Contents 1961-66.

DDUGLAS L. CDLEMAN, Ph.D. -- Senior Staff Scientist, The Jackson Laboratory since 1969.

B.S., McMaster University 1954; M.S., University of Wisconsin 1956; Ph.D., University of Wisconsin 1958; Fellowship, E.I. Dupont de Nemours 1957-58.

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Research Assistant, University of Wisconsin 1954-57; Associate Staff Scientist 1958-61, Staff Scientist 1961-68, Assistant Director of Research 1969-70, The Jackson Laboratory.

Member: American Assn. of Biological Chemists.

Philip A. CORFMAN, M.D. -- Director, Center for Population Research, National Institute for Child Health and Development, NIH since 1968; Chairman, Interagency Committee for Population Research, DHEW since 1968.

B.A., Oberlin College 1950; M.D., Harvard Medical School 1954; Surgical Internship and Residency, Boston City Hospital 1954-56; Obstetrical and Gynecological Residency, Boston Lying-In Hospital and the Free Hospital for Women 1956-59; American Board of Obstetrics and Gynecology.

Teaching Fellow in Obstetrics and Gynecology, Harvard Medical School 1956-59; Obstetrician and Gynecologist, Rip Van Winkle Clinic 1959-63; Foundation Fellow in Obstetrics and Gynecology, Columbia University, College of Physicians and Surgeons 1963-64; Program Associate for Population Research, Reproduction Program, NICHD 1965-66; Acting Program Director, Reproduction Program NICHD 1967-68; Chairman, Public Health Service Population Committee 1967-68.

Member: Population Assn. of America; Society for the Study of Fertility; American College of Obstetricians and Gynecologists.

MARVIN CORNBLATH, M.D. -- Professor and Chairman, Department of Pediatrics, University of Maryland School of Medicine since 1968; Pediatrician-in-Chief, University of Maryland Hospital since 1968.

M.D., Washington University School of Medicine 1947; Internship, St. Louis Jewish Hospital 1947-48; Residency, St. Louis Children's Hospital 1948-50; Post-doctoral Fellow, National Heart Institute, USPHS, Washington University School of Medicine 1950-51; American Board of Pediatrics 1952.

Assistant in Pediatrics, Washington University School of Medicine 1948-50; Instructor in Pediatrics 1953-57, Assistant Professor of Pediatrics 1957-59, Johns Hopkins University School of Medicine; Pediatrician, Johns Hopkins Hospital 1956-59; Assistant Chairman, Division of Peidatrics, Michael Reese Hospital 1959-61; Assistant Professor, Department of Pediatrics 1959-60, Associate Professor, Department of Pediatrics 1960-61, Northwestern University Medical School; Associate Professor, Department of Pediatrics 1961-63, Professor, Department of Pediatrics 1963-68, University of Illinois College of Medicine.

Member: American Academy of Pediatrics; American Pediatric Society; American Physiological Society; American Society of Biological Chemists; American Assn. for the Advancement of Science; American Diabetes Assn.; American Society for Pediatric Endocrinology; Ambulatory Pediatric Assn.; British Biochemical Society; Endocrine Society; Society for Pediatric Research; Editorial Board, Diabetes 1966-70, American Journal of Diseases of Children 1972-.

RAYMOND DOUGLAS COTTON, J.D. -- Executive Assistant, Office of the Assistant Secretary for Health, U.S. DHEW since 1971.

A.B., Monmouth College 1965; J.D., Harvard Law School 1968; S.M. Hyg., Harvard School of Public Health 1969; Massachusetts Bar 1968; District of Columbia Bar 1972.

Legislative Research Associate, Special Advisory Committee to the Governor of Massachusetts 1968; Legal Consultant, Division of Legal Medicine, Department of Mental Health, Massachusetts 1968-69; Attorney-Advisor, Division of Public Health Grants and Services, Office of the General Council, DHEW 1969-70.

Member: American Bar Assn.; National Environmental Health Assn.; American Academy of Forensic Sciences; Federal Bar Assn.; United Health Foundations; Psi Chi; Lambda Sigma Tau; Editorial Board: Journal of Environmental Health.

JOHN E. CRAIGHEAD, M.D. -- Professor and Chairman, Department of Pathology and Director of Laboratories, Medical Center Hospital of Vermont and University of Vermont College of Medicine since 1974; Professor of Pathology, University of Vermont College of Medicine since 1969.

B.S., University of Utah 1952; M.D., University of Utah 1956; Internship, Ward Medical Service, Barnes Hospital 1956-57; Residency, Peter Bent Brigham Hospital 1960-63; Teaching Fellow in Pathology, Harvard Medical School 1961-63; Special Fellow, NIH 1963; Traveling Fellow, Royal Society of Medicine 1971; American Board of Pathology (Anatomical) 1963; American Board of Pathology (Clinical) 1967.

Laboratory of Infectious Disease, NIH 1957-58; Middle American Research Unit, NIH 1958-60; Associate in Pathology 1963-66, Assistant Professor in Pathology 1966-68, Harvard Medical School; Associate in Pathology, Peter Bent Brigham Hospital 1963-68; Associate Professor of Pathology, University of Vermont College of Medicine 1968-69.

Member: American Assn. for the Advancement of Science; American Assn. of Pathologists and Bacteriologists; American Society of Clinical Pathologists; American Society for Experimental Pathology; American Society for Microbiology; College of American Pathologists; Infectious Diseases Society of America; International Academy of Pathology; Society for Experimental Biology and Medicine; Tissue Culture Assn. of America.

OSCAR B. CROFFORD, M.D. -- Professor of Medicine and Associate Professor of Physiology, Vanderbilt University School of Medicine; Director, Vanderbilt University Diabetes-Endocrinology Center.

A.B. 1952, M.D. 1955, Vanderbilt University School of Medicine Internship in Medicine 1955-56, Assistant Resident 1956-57, Residency 1962-63, Vanderbilt University Hospital, USPHS Postdoctoral Research Fellowship in Clinical Physiology 1959-62, Vanderbilt University Hospital, USPHS Special Fellowship 1963-65, Institute de Biochimic Clinique, Geneva.

Assistant Professor of Medicine 1965-68, Assistant Professor of Physiology 1966-70, Associate Professor of Medicine 1968-74, Associate Professor of Physiology 1970-, Vanderbilt University.

Member: American Diabetes Association, 1965; Committee on Professional Education, 1967-71; Committee on Research, 1971-1975, Vice-Chairman, 1973-75; Board of Directors, 1972-75; European Association for the Study of Diabetes, 1965; American Society for Clinical Investigation, 1967; American Physiological Society, 1970; Endocrine Society, 1973; Phi Beta Kappa, 1951; Lilly Award of the American Diabetes Association, 1970.

WILLIAM H. DAUGHADAY, M.D. -- Director, Metabolism Division, Washington University School of Medicine since 1951; Professor of Medicine, Washington University School of Medicine since 1963.

B.A., Harvard College 1940; M.D., Harvard Medical School 1943; Internship, Boston City Hospital 1944; Residency, Barnes Hospital 1947-48; Research Fellow, Throndike Memorial Laboratory, Boston City Hospital 1946-47; Research Fellow in Medicine, Washington University 1948-49; NIH Fellow in Biological Chemistry, Washington University 1949-50; American Board of Internal Medicine 1970.

Instructor in Medicine 1950-51, Assistant Professor of Medicine 1951-57, Associate Professor of Medicine 1957-63, Washington University School of Medicine; Acting Chairman, Department of Medicine, Washington University School of Medicine 1972-73.

Member: Central Society for Clinical Research; Central Clinical Research Club, President 1962; American Federation for Clinical Research; National Academy of Sciences 1973; American Society for Clinical Investigation; Assn. of American Physicians; Endocrine Society, President 1971-72; American Institute of Nutrition; American Society for Clinical Nutrition; Phi Beta Kappa; Alpha Omega Alpha; Sigma Xi; Editorial Board, Nutrition Review 1954-58; Editor, The Journal of Clinical Endocrinology and Metabolism 1973-.

JOHN KEAY DAVIDSON, III, M.D., Ph.D. -- Professor of Endocrinology, Director Diabetes Unit, Emory University School of Medicine since 197D; Attending Physician, Director Diabetes Unit, Grady Memorial Hospital since 1968.

B.S., Emory University 1943; M.D., Emory University School of Medicine 1945; Ph.D., University of Toronto 1965; Internship, Grady Memorial Hospital 1945-46; Residency, Grady Memorial Hospital 194B-49; Residency, Emory University Hospital 1949-5O; Residency, New England Center Hospital 195O-51; Research Fellow, American Diabetes Assn. 1961-65; National Board of Medical Examiners 1951; American Board of Internal Medicine 1954.

Assistant Professor, Banting and Best Department of Medical Research 1964-66, Assistant Professor Physiology 1965-66, Associate Professor Physiology 1966-6B, Research Associate, Internal Medicine 1965-66, Clinical Teacher Internal Medicine 1966-68, University of Toronto; Associate Professor of Endocrinology, Director Diabetes Unit, Emory University School of Medicine 1968-7D; Attending Physician, Emory University Hospital 196B- .

Member: Georgia Diabetes Assn., President 1959-6O; New York Academy of Sciences; Fellow, American College of Physicians; Canadian Physiological Society; Endocrine Society; American Physiological Society; American Society of Internal Medicine.

MATTHEW D. DAVIS, M.D. -- Professor and Chairman, Department of Ophthalmology, University of Wisconsin since 197O.

B.A., University of Wisconsin 1947; M.D., University of Pennsylvania 195O; Internship, University of Wisconsin 195D-51; Residency, University of Wisconsin 1951-55; Heed Fellow, Retina Service, Massachusetts Ear and Eye Infirmary 1956.

Clinical Instructor of Surgery 1956-59, Assistant Clinical Professor of Surgery 1959-65, Associate Clinical Professor of Surgery 1965-7O, University of Wisconsin.

Member: American Ophthalmological Society; Retina Society; Assn. for Research in Vision and Ophthalmology; American Academy of Dphthalmology and Dtolaryngology.

THDMAS A. DAVIS, Ph.D. -- Senior Chemical Engineer, Southern Research Institute since 1967.

B.S., University of South Carolina 1961; Ph.D., University of South Carolina 1967; National Science Foundation Training Fellow, National Aeronautics and Space Administration Training Fellow 1967.

Junior Chemical Engineer, Deering Milliken Research Corporation 1963-64.

Member: American Institute of Chemical Engineers; American Society for Artificial Internal Organs; Sigma Pi Sigma.

FLEX F. DE LA CRUZ, M.D. -- Clinical Associate Professor of Pediatrics, Georgetown University School of Medicine since 1969; Special Assistant for Pediatrics, National Institutes of Child Health and Human Development, NIH since 1969.

M.D., University of Santo Tomas, 1956, M.P.N., Johns Hopkins University 1961, Internship, 62DBth U.S. Air Force Hospital 1955-56; Residency, University of Washington School of Medicine 1956-5B; American Board of Pediatrics 1961.

Staff Pediatrician, Ranier School 1958-64; Assistant Instructor, Public Health Administration, 1959-61; Fellow, Department of Pediatrics 1959-61; Pediatrician, Outpatient Department, Harriet Lane Home 1959-61, Johns Hopkins University; Medical Officer 1964-65, Chief, Children's Diagnostic and Study Branch 1965-69, NICHHD, NIH; Clinical Assistant, Professor of Pediatrics, Georgetown University School of Medicine 1966-69.

Member: Fellow, American Academy of Pediatrics 1967, American Assn. on Mental Deficiency, American Society of Human Genetics; American Assn. for the Advancement of Science; Pan American Medical Assn. Inc.; Maternal and Child Health Assn. of the Philippines.

EDWARD DIGDN, M.P.H. -- Acting Director, Division of Management Information Systems, Bureau of Program Evaluation, Pennsylvania Department of Health since 1974; Project Coordinator, Health Manpower Component, Pennsylvania Cooperative Health Statistics System since 1974.

B.S., Pennsylvania State University 195B; M.P.H., University of California at Berkeley 1961.

Statistician, Division of Statistics and Records 1958-61, Biostatistician, Division of Statistics and Records 1961-62; Biostatistician, Division of Research and Biostatistics, Bureau of Planning, Evaluation and Research 1962-73, Chief of Biostatistical Research, Bureau of Program Evaluation 1973-74, Pennsylvania Department of Health.

NANCY AUSTIN DIXON, Research Specialist.

B.A., Duquesne University 1962; M.A., University of Detroit 1968.

Instructor, Michigan State University 1965-71, Olivet College 197D, Lansing Community College 196B; Free Lance Research in Medical Affairs 1973-.

ALLAN L. DRASH, M.D. -- Professor of Pediatrics, University of Pittsburgh School of Medicine since 1975.

B.A., Vanderbilt University 1953; M.D., University of Virginia School of Medicine 1957; Internship 1957-58, Residency 195B-6D, Harriet Lane Home, Johns Hopkins Hospital; Research Fellow 1962-63, Research Fellow 1963, Department of Medicine, Johns Hopkins Hospital; Research Fellow, Division of Pediatric Endocrinology, Johns Hopkins University School of Medicine 1963-64; American Board of Pediatrics 1962.

Assistant Professor, Department of Pediatrics, 1964, Director of Pediatric Diabetic Clinic, Pediatric Endocrine Clinic 1965, Johns Hopkins Hospital; Director, NIH Clinical Research Unit 1966; Director, Pediatric Diabetes Clinic 1966, Co-director, Division of Pediatric Endocrinology and Metabolism 1966, Children's Hospital of Pittsburgh; Assistant Professor, Department of Pediatrics 1966, Associate Professor of Pediatrics 1969, University of Pittsburgh School of Medicine.

Member: Fellow, American Academy of Pediatrics; Society for Pediatric Research; Endocrine Society; American Diabetes Assn.; American Federation for Clinical Research; American Assn. for Advancement of Science; New York Academy of Sciences; Editorial Board: Metabolism.

LEATRICE DUCAT, B.S. -- President, Juvenile Diabetes Foundation.

B.S. 1953, University of Pennsylvania, Radio and television station WCAU Philadelphia 1942-5D, Newswriter Philadelphia Evening Bulletin 1944-47, Professional singer, "Lane Sisters" 195D-53.

WILLIAM E. DULIN, Ph.D. -- Research Manager, Department of Diabetes and Atherosclerosis Research, Upjohn Company since 1971.

B.S., Washington College 1947; Ph.D., Indiana University 1952.

Research Associate, Department of Endocrinology 1952-56, Research Section Head, Department of Metabolic Diseases Research 1956-68, Research Manger, Department of Diabetes Research 1968-71, Upjohn Company.

Member: Society for Experimental Biology and Medicine; Endocrine Society; American Diabetes Assn.; American Physiological Society; American Heart Assn.

HARDLD BRUCE DULL, M.D. -- Clinical Associate Professor of Preventive Medicine and Community Health, Department of Preventive Medicine and Community Health, Emory University School of Medicine since 1971.

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A.B., Harvard College 1952; M.D., Case Western Reserve University School of Medicine 1956; S.M., Harvard School of Public Health 1970; Internship, University Hospitals of Cleveland 1956-57; Residency, Peter Bent Brigham Hospital 1960-61, 1963-64; Fellow, Harvard University School of Medicine 1961-63; Fellow, Research Division of Infectious Diseases, Children's Hospital Medical Center of Boston 1961-63.

Chief, Influenza-Respiratory Disease Unit, Epidemiology Branch, 1964-66, Assistant Director, Center for Disease Control 1966-70, Assistant Director for Program, Center for Disease Control 1970-, Atlanta; Physical Diagnosis Instructor, Emory University School of Medicine 1958-60.

Member: American College of Preventive Medicine; American Epidemiological Society; International Epidemiological Assn.; Society for Epidemiologic Research; Alpha Omega Alpha 1955; Sigma Xi 1964.

PETER JAMES DYCK, M.D. -- Professor of Neurology, Mayo Graduate School of Medicine since 1973.

B.S., University of Saskatchewan 1951; M.D., University of Toronto 1955; Internship, University Hospital, Saskatoon 1955-56; Residency, University Hospital, Saskatoon 1956-57; Fellow in Neurology, University Hospital, Saskatoon 1958; Fellow in Neurology, Mayo Foundation 1959-60; American Board of Psychiatry and Neurology 1962.

Instructor in Neurology 1963-67, Assistant Professor of Neurology 1967-69, Associate Professor of Neurology 1969-73, Mayo Graduate School of Medicine.

Member: American Neurological Assn.; Fellow, American College of Physicians; Fellow, Academy of Neurology; American Assn. of Electromyography and Electrodiagnosis; American Assn. of Neuropathologists; American Assn. for the Advancement of Science; American Society for Cell Biology; Sigma Xi.

ELDON LEWIS EAGLES, M.D., Dr. P.H. -- Deputy Director, National Institute of Neurological Diseases and Stroke, NIH since 1970.

M.D., Dalhousie University Faculty of Medicine 1936; Dr. P.H., Johns Hopkins University School of Hygiene and Public Health 1958; Internships, Grace Maternity Hospital 1934-35; Victoria General Hospital, Halifax Tuberculosis Hospital and Halifax Infirmary, St. Martha's Hospital 1935-36; Rockefeller Foundation Fellow, University of Toronto, School of Hygiene 1936-40; Special Student 1955-1956; Research Fellow, Johns Hopkins School of Hygiene and Public Health 1956-57; Royal College of Physicians Surgeons of Canada 1951.

General Practice 1936-39; Divisional Medical Health Officer, Department of Public Health, Windsor, Nova Scotia 1940-47, Yarmouth, Nova Scotia 1947-54; Director, Child and Maternal Health and Communicable Disease Control, Nova Scotia Department of Public Health 1954-56; Director of Studies, Subcommittee on Medical Services and Facilities for Handicapped Children Committee on Medical Care, Maryland State Planning Commission 1956-57; Research Associate 1957-60 Associate Research Professor of Maternal and Child Health 1960-64, Graduate School of Public Health, Member Graduate Faculty 1961-64, University of Pittsburgh; Executive Director, Subcommittee on Hearing in Children of the Committee on Conservation of Hearing of the American Academy of Ophthalmology and Otolaryngology 1956-64; Member of Faculty of Department of Public Health Practice, Maternal and Child Health Section, Graduate School of Public Health, University of Pittsburg 1957-64; Committee USPHS 1962-63; Assistant Director, National Institute of Neurological Diseases and Blindness, NIH 1964-70.

Member: Canadian Tuberculosis Assn. American Trudeau Society; Fellow, American Speech and Hearing Assn. 1964-; Fellow, American Assn. for the Advancement of Science 1960-; American Academy of Ophthalmology and Otolaryngology; Phi Rho Sigma, Sigma Xi.

HOWARD A. EDER, M.D. -- Professor of Medicine, Albert Einstein College of Medicine since 1960.

A.B., University of Wisconsin 1938; M.D., Harvard Medical School 1942; M.P.H., Harvard School of Public Health 1945; Internship, Peter Bent Brigham Hospital 1942-43; Residency, Peter Bent Brigham Hospital 1943-44; Research Fellow in Medicine, Harvard Medical School 1943-44; Research Fellow in Nutrition and Biochemistry, Harvard Medical School 1945-46; American Board of Internal Medicine 1952.

Assistant in Medicine, Assistant Physician, Hospital of the Rockefeller Institute 1946-50; Assistant Professor of Medicine, Cornell University Medical College 1950 53; Investigator, National Heart Institute 1953-35; Associate Professor of Medicine State University of New York College of Medicine 1955-57; Associate Professor of Medicine, Albert Einstein College of Medicine 1957-60; Visiting Professor, St. Mary's Hospital Medical School 1965-66.

Member: Assn. of American Physicians; American Society for Clinical Investigation; American Society for Biological Chemists; Society for Experimental Biology and Medicine; American Heart Assn.; Royal Society of Medicine; Biochemical Society; American Physiological Society; Phi Beta Kappa; Alpha Omega Alpha; Editorial Board, American Journal of Physiology 1968-71; Associate Editor, Journal of Lipid Research 1968-70.

FRED EDERER -- Head, Section on Clinical Trials and Natural History Studies, National Eye Institute since 1971.

B.S., City College of New York 1949; M.A., American University 1959.

Junior Actuary, New York City Employees' Retirement System 1949-50; Junior Statistician, New York City Health Department 1950-52; Statistician, Office of Surgeon General, U.S. Air Force 1952-55; Statistician, Bureau of Labor Statistics 1955-57; Statistician, National Cancer Institute 1957-62; Head, Biometrics Analysis Section, National Center Institute 1962-64; Statistican, National Heart and Lung Institute 1964-71.

Member: Fellow, American Statistical Assn.; American Heart Assn., Fellow, Council on Epidemiology; Biometrics Society; Society for Epidemiologic Research.

MAX ELLENBERG, M.D. -- Clinical Professor of Medicine, Mount Sinai School of Medicine of the City University since 1970; Attending Physician For Diabetes, Mount Sinai Hospital since 1969.

B.S., City College of New York 1931; M.D., New York University, College of Medicine 1935; Internship, 1931-37, Residency 1937-38, Mount Sinai Hospital; American Board of Internal Medicine 1942.

Senior Clinical Assistant in Metabolism 1938-51, Research Assistant in Chemistry 1940-51, Chief, Diagnostic Clinic 1951-55, Assistant Attending Physician 1951-53, Associate Attending Physician 1963-69, Mount Sinai Hospital; Instructor in Medicine, College of Physicians and Surgeons, Columbia University 1940-52; Associate Clinical Professor of Medicine, Mount Sinai School of Medicine of the City University 1967-69.

Member: American Diabetes Assn., President 1974-75; New York Diabetes Assn., President 1963; International Diabetes Federation; American College of Physicians; AMA; American Society of Internal Medicine; International Society of Internal Medicine; Phi Beta Kappa 1931; Alpha Omega Alpha 1950; Editorial Consultant Diabetes; Editor, Current Concepts of Diabetes, New York State Journal of Medicine 1960-62; Editor, Mount Sinai Hospital Symposium for Journal of Geriatrics 1963.

PAUL M. ELLWOOD, JR., M.D. -- President of Interstudy since 1973; Director of Health Services Research Center; Clinical Professor of Physical Medicine and Rehabilitation and Clinical Associate Professor of Neurology and Pediatrics, University of Minnesota since 1965.

B.A., Stanford University 1949; M.D., Stanford School of Medicine 1953; Internship in Pediatrics and Fellow in Pediatrics and Neurology, University of Minnesota 1952-57; Fellow in Physical Medicine and Rehabilitation, University of Washington 1961-62; Physical Medicine and Rehabilitation Board 1967.

Clinical Management 1953-58; Assistant Director 1962-63, Kenny Rehabilitation Institute; Executive Director, American Rehabilitation Foundation 1963-73; Chairman, Minnesota Governor's Commission on Health and Rehabilitation 1966; Consultant, Office of the Secretary, Department of Health, Education, and Welfare 1969; Consultant, Office of the Director, Health

Services and Mental Health Administration, National Center for Health Services Research and Development, 1969-72. Consultant, Special Research and Development Projects Division, Health Services and Mental Health Administration, National Center for Health Services Research and Development 1972-73; Director of A.R.F. Project 749, "A Study of Methods of Implementing Comprehensive Health Planning in the States;" Director of A.R.F. Project 730, "Plans for a National Center for Health Services Research and Development;" Directed A.R.F. Project, "Health Maintenance Strategy."

Member: National Center for Health Services Research and Development, Scientific and Professional Advisory Board 1968-69; DHEW National Health Council Board of Directors 1971; Special Medical Advisory Group, VA, Office of the Administrator of Veterans Affairs 1972- ; National Academy of Sciences Institute of Medicine 1974- ; Advisory Panel on National Health, Committee on Ways and Means 1975- .

WILLIAM KING ENGEL, M.D. - Chief, Medical Neurology Branch, Clinical and Experimental Neurology, National Institute of Neurological Diseases and Stroke since 1963; Clinical Professor of Neurology, George Washington University School of Medicine since 1970.

B.A., Johns Hopkins University 1951; M.D., C.M., McGill University Faculty of Medicine 1955; Internship, University of Michigan Hospital 1955-56; National Board of Medical Examiners 1957; American Board of Neurology and Psychiatry 1962.

Clinical Associate, Clinical Neurology 1956-57 Clinical Associate, Experimental Neuropathology 1957-59, Clinical Clerk; Clinical Neurology, Neuropathology, National Hospital 1959-60, Associate Neurologist, Clinical and Experimental Neurology 1960-62, Acting Chief, Medical Neurology Branch, Clinical and Experimental Neurology 1962-63, National Institute of Neurological Diseases and Blindness.

Member: Histochemical Society; Fellow, American Academy of Neurology; American Society for Cell Biology; Pan American Medical Society; World Commission on Neuromuscular Disease; American Assn. of Neuropathologists; American Neurological Assn.; Societe Belge d'Electromyographie; Society for Neuroscience.

RONALD L. ENGERMAN, Ph.D. -- Associate Professor, Department of Ophthalmology, University of Wisconsin since 1968.

B.S., University of Wisconsin 1951; M.S., University of Wisconsin 1959; Ph.D., University of Wisconsin 1964; Predoctoral Fellow, Department of Zoology University of Wisconsin 1956-60.

Laboratory Technician, Bjorksten Research Laboratories 1951;Rubber Technologist, Engineer Research and Development Laboratories 1953-54; Graduate Research Assistant, Department of Zoology 1954-56, Instructor Department of Surgery 1960-64, Assistant Professor, Department of Surgery 1964-68, University of Wisconsin.

Member: Assn. for Research in Vision and Ophthalmology; American Diabetes Assn.; Society for Experimental Biology and Medicine; American Assn. for the Advancement of Science.

PAUL S. ENTMACHER, M.D. -- Vice President and Chief Medical Director, Metropolitan Life Insurance Company since 1974.

B.S., Harvard University 1945; M.D., New York Medical College 1947; American Board of Internal Medicine 1956; Board of Life Insurance Medicine 1961.

Assistant Medical Director 1958-63, Associate Medical Director 1963-65, Medical Director 1965-74, Metropolitan Life Insurance Company.

Member: Fellow, American College of Physicians; Fellow, American College of Preventive Medicine; American Diabetes Assn.; American Society of Internal Medicine; Assn. of Life Insurance Medical Directors of America; Fellow, American Heart Assn.; Fellow, New York Academy of Medicine; New York Academy of Sciences; New York Diabetes Assn., Past President.

DONNELL D. ETZWILER, M.D. -- Clinical Associate Professor in Pediatrics, University of Minnesota since 1969; Pediatrician, Department of Pediatrics, St. Louis Park Medical Center since 1957.

B.A., Indiana University 1950; M.D., Yale University School of Medicine 1953; Internship, Grace-New Haven Community Hospital 1953-54; Residency, New York Hospital-Cornell Medical Center 1954-55; Fellow in Pediatrics, Cornell University College of Medicine 1955-56.

Instructor in Pediatrics, Cornell University Medical College 1956-57; Clinical Assistant in Pediatrics 1957-58, Clinical Instructor 1958-64, Clinical Assistant Professor 1964-69, University of Minnesota; Medical Director, Minnesota's Camp for Diabetic Children 1959-.

Member: Fellow American Academy of Pediatrics; Diabetes Detection and Education Center Research Foundation, President 1967-73; American Diabetes Assn.; Society of Public Health Education.

JOHN N. FAIN, Ph.D. -- Chairman, Section of Physiological Chemistry, Brown University since 1974, Professor of Medical Science, Brown University since 1971.

B.S., Carson-Newman College 1956; Ph.D., Emory University 1960; National Science Foundation Postdoctoral Fellowship 1961-62; USPHS Postdoctoral Fellowship 1962-63.

Teaching Assistant 1957-58, Research Associate 1960-61, Department of Biochemistry, Emory University; Biochemist, Section on Endocrinology, National Institute of Arthritis, Metabolism, and Digestive Diseases, NIH 1963-65; Assistant Professor of Medical Science 1965-68, Associate Professor of Medical Science 1968-71, Brown University.

Member: Endocrine Society; American Society of Biological Chemist; American Assn. for the Advancement of Science; American Physiological Society; Editorial Board: American Journal of Physiology and the Journal of Applied Physiology 1968-74; Endocrinology 1969-73; Metabolism 1970- ; Journal of Cyclic Nucleotide Research 1974- .

STEFAN S. FAJANS, M.D. -- Head, Division of Endocrinology and Metabolism, Director, Metabolism Research Unit since 1973, Professor of Internal Medicine since 1961, Univesity of Michigan Medical Center.

B.S., University of Michigan 1938; M.D., University of Michigan Medical School 1942; Internship, Mount Sinai Hospital 1942-43; Residency, University of Michigan Medical Center 1947-49; American Board of Internal Medicine 1951.

Instructor in Internal Medicine 1949-51, Assistant Professor of Internal Medicine 1951-55, Associate Professor of Internal Medicine 1955-61, University of Michigan Medical Center.

Member: Fellow, American College of Physicians; Fellow, Life Insurance Medical Research; American Assn. for the Advancement of Science; Assn. of American Physicians; American Diabetes Assn., President 1971-72; American Federation for Clinical Research; American Society for Clinical Research; Central Society for Clinical Research; Endocrine Society, Vice-President 1970-71; Phi Beta Kappa; Alpha Omega Alpha; Sigma Xi; Phi Kappa Phi; Associate Editor, Metabolism-Clinical and Experimental 1957-69; Editorial Board, Diabetes 1962-63; Editorial Board, Journal of Clinical Endocrinology and Metabolism 1963-70.

PHILIP MARSHALL FARRELL, M.D., Ph.D. -- Chief, Section on Developmental Biology and Clinical Nutrition Section, Chief, Neonatal and Pediatric Medicine Branch since 1975.

A.B., Saint Louis University 1964; M.D., Saint Louis University 1968; Ph.D., Saint Louis University 1970; Internship, University of Wisconsin Hospitals 1970-71; Residency, University of Wisconsin Hospitals 1971-72; National Board of Medical Examiners 1971.

Senior Investigator, Pediatric Metabolism Branch, National Institute of Arthritis, Metabolism and Digestive Diseases, NIH 1974-75; Assistant Research Professor, Child Health and Development, George Washington University, School of Medicine and Health Sciences 1975-.

Member: American Chemical Society; Society for Complex Carbohydrates; AMA; Society for Pediatric Research; American Thoracic Society, Society for Experimental Biology and Medicine; New York Academy of Sciences; Sigma Xi; Alpha Omega Alpha 1970; Phi Beta Kappa 1970.

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PHILIP FELIG, M.D. -- Vice Chairman and Professor of Medicine, Department of Internal Medicine, Yale University School of Medicine since 1971.

A.B., Princeton University 1957; M.D., Yale University School of Medicine 1961; Internship 1961-62, Residency 1962-63, 1965-67, Yale-New Haven Hospital; Research Fellow, Joslin Research Laboratory 1967-69, American Board of Internal Medicine.

Instructor in Medicine 1966-69, Assistant Professor of Medicine 1969-72, Associate Professor of Medicine 1969-72, Associate Professor of Medicine 1972-75, Yale University School of Medicine; Attending Physician, Yale-New Haven Hospital 1969-; Director, Yale Diabetes Teaching and Consultation Program 197D-.

Member: American Society for Clinical Investigation; Endocrine Society; American Federation of Clinical Research; American Diabetes Assn.; Juvenile Diabetes Foundation; New York Academy of Sciences; Connecticut Diabetes Assn., President 1974-76; Fellow, American College of Phusicians; Society for Experimental Biology and Medicine; Alpha Dmega Alpha, President Yale Chapter, 196D-61; Sigma Xi; Editorial Board, Diabetes 1974-, Yale Journal of Biology and Medicine 1969-7D; Associate Editor, Clinical Research 1971-74.

PHILIP FELTS, M.D. -- Assistant Professor of Medicine since 1966, Assistant Professor of Biochemistry since 1973, Coordinator of Teaching and Learning Resources, Diabetic Center since 1973, Director of Student Affairs since 1975, Vanderbilt University School of Medicine.

B.A., Vanderbilt University 1952; M.D., Vanderbilt University School of Medicine 1956; Internship 1956-57, Residency 1959-61, Vanderbilt University Hospitals; Fellow in Physiology 1962; Life Insurance Medical Research Fund Fellow 1962-63, 1963-64, Advance Research Fellow, American Heart Assn. 1964-65.

Instructor in Medicine 1959-63; Instructor in Physiology 1961-63; Vanderbilt University School of Medicine; Guest Investigator, Munich Germany 1963-65; Clinical Investigator 1965-68, Chief Diabetes and Metabolism 1968-75, Nashville VA Hospital; Instructor in Medicine 1965-66; Instructor in Physiology 1966-73, Director of Diabetes Clinic 1973-75, Vanderbilt University School of Medicine; Established Investigator American Heart Assn. 1968-73.

Member: American Diabetes Assn.; European Assn. for the Study of Diabetes; American Federation for Clinical Research; American Assn. for Advancement of Science; American Assn. of University of Professors; Alpha Omega Alpha 1972, Sigma Chi, 1969.

FREDERICK PALMER FERGUSDN, Ph.D. -- Acting Director, Biomedical Engineering Program, National Institute of General Medical Sciences, NIH since 1975.

B.A., Wesleyan University 1938; M.A., Wesleyan University 1939; Ph.D., University of Minnesota 1943.

Instructor in Physiology, Louisiana State University School of Medicine 1943-45; Assistant Professor of Physiology, Rutgers University 1945-47; Assistant Professor of Biology, Wesleyan University 1947-49; Assistant Professor Physiology 1949-52, Associate Professor 1952-55, Professor 1955-6D, Acting Head, Department of Physiology 1959-6D, University of Maryland School of Medicine; Chief, Research Fellowships Section, Research Training Branch, Division of General Medical Services, NIH 196D-63; Chief, Research Fellowships Branch 1963-73, Deputy Director, Biomedical Engineering Program 1973-75, National Institute of General Medical Services, NIH.

Member: American Physicological Society; American Society of Zoologists; Society for Experimental Biology and Medicine, New York Academy of Sciences; American Assn. for the Advancement of Science; Biomedical Engineering Society; Phi Beta Kappa; Sigma Xi.

JAMES BERNARD FIELD, M.D. -- Head, Division of Endocrinology and Metabolism since 1962, and Professor of Medicine and Director of Clinical Research Unit since 1966 at University of Pittsburgh School of Medicine.

M.D., Harvard Medical School 1951; Internship 1951-52, Residency 1952-54, Massachusetts General Hospital; American Board of Internal Medicine 1961.

Medical Dfficer 1954, Senior Assistant Surgeon 1954-58, Surgeon 1958-6D, Senior Surgeon 196D-61, Medical Officer 1961-62, U.S. Public Health Service, NIH, National Institute of Arthritis and Metabolic Diseases; Assistant in Medicine, Diabetic Department, Kings College Hospital, London; Associate Professor of Medicine and Director of Clinical Research Unit, University of Pittsburgh School of Medicine 1962-66; Consultant, USPHS, Bureau of State Services, Division of Chronic Diseases, Diabetes and Arthritis Branch 1962-68; USPHS, Endocrinology Study Section 1965-69.

Member: American Physicians; American Society for Clinical Investigation; American Physiology Society; Endocrine Society; American Federation for Clinical Research; USPHS, Special Study Section on Diabetes-Endocrinology Centers 1973; Research Collaborator, Brookhaven National Laboratory 1972- ; American Diabetes Assn., Board of Directors 1968-74; Alpha Omega Alpha.

RICHARD A. FIELD, M.D. -- Senior Scientist, Retina Foundation since 1972; Associate Clinical Professor of Medicine, Harvard Medical School since 1974; Clinical Associate in Medicine, Massachusetts General Hospital since 1972.

A.B., Harvard College 1943; M.D., Harvard Medical School 1950; Internship, 195D-51; Residency, 1951-53, 1955; Massachusetts General Hospital; Fellow, National Cancer Institute 1953-54; Research Fellow, Washington University School of Medicine 1954, 1956; National Board of Medical Examiners 1951; American Board of Internal Medicine 1958.

Instructor 1954-58, Associate 1958-62, Assistant Professor 1963-66, Visiting Associate Clinical Professor of Medicine 197D-74, Harvard Medical School; Investigator, Howard Hughes Medical Institute 1957-65; Assistant in Medicine 1957-58, Assistant Physician 1958, Program Director, Diabetes Unit 1957-62, Chief Diabetes Unit 1963-66, Massachusetts General Hospital; Associate Professor 1966-68, Professor of Medicine 1968-7D, Jefferson Medical College; Director, Division of Diabetes and Metabolic Diseases 1966-68, Director, Division of Endocrinology and Metabolic Diseases 1968, Attending Physician 197D, Jefferson Medical College Hospital; Associate, Retina Foundation 197D-72; Director, Division of Endocrinology, Philadelphia General Hospital 1967-70.

Member: American Diabetes Assn.; American Federation for Clinical Research; Fellow, American College of Physicians; New York Academy of Sciences; Endocrine Society; Sigma Xi 1969; Alpha Dmega Alpha 195D; Associate Editor, Metabolism -- Clinical and Experimental.

J. WILLIAM FLYNT, JR., M.D. -- Chief, Birth Defects Branch, Deputy Chief Cancer and Birth Defects Division, Bureau of Epidemiology, Center for Disease Control since 1971; Clinical Assistant Professor of Preventive Medicine and Community Health Emory University School of Medicine since 1971.

B.A., Emory University 1956; M.D., Emory University 1960; Internship, Fitzsimons General Hospital 196D-61; Residency, Johns Hopkins Hospital 1967-69; American Board of Pediatrics 197D.

Chief, Seminar Services Unit, Training Branch, Center for Disease Control, Atlanta 1964-65; Epidemic Intelligence Service Dfficer, U.S.P.H.S., Center for Disease Control, Kansas City 1965-67; Chief, Congenital Malformations Unit, Leukemia Section, Epidemiology Program, Center for Disease Control, Atlanta 1969-71.

Member: Society for Epidemiological Research; American Academy of Pediatrics; World Health Organization 1972; Fogarty International Center Committee on the Prevention of Fetal and Perinatal Disease 1972-73; Alpha Dmega Alpha; Editor, Epidemiology Section; Teratology 1975-.

BYRON JOHN FRANCIS, M.D. -- Chief, Division of Disease Control, Illinois Department of Public Health.

A.B., University of Chicago 195D; M.D., University of Chicago 1956; M.P.H., University of Minnesota 1965; Residency, Public Health, Benton-Franklin District Health Department 1960-61; Division of Epidemiology, Washington State Department of Health 1961-62. Certified in Public Health, American Board of Preventive Medicine 1969.

Preventive Medicine Officer, U.S. Civil Administration, Ryukyu Islands 1958-6D; Head, Noncommunicable Disease Epidemiology Section 1965-68 and Head, Epidemiology Section 1968-72 at Washington State Department of Social and Health Services, Health Services Division.

ROBERT NEIL FRANK, M.D. -- Senior Staff Ophthalmologist, Clinical Branch, National Eye Institute, NIH since 1972.

A.B., Harvard College 1961; M.D., Yale University School of Medicine 1966; Internship, Grady Memorial Hospital 1966-67; Residency, Wilmer Institute 1969-72; Fellow in Dphthalmology, Wilmer Institute of Dphthalmology 1967-69; National Board of Medical Examiners 1967; American Board of Dphthalmology 1973.

Member: American Academy of Ophthalmology and Otolaryngology; Phi Beta Kappa 1961; Sigma Xi 1965.

ROGER K. FREEMAN, M.D. -- Associate Professor of Dbstetrics and Gynecology, University of Southern California Medical Center since 1973; Medical Director, Women's Hospital, Memorial Hospital Medical Center of Long Beach since 1975.

B.A., Pomona College 1957; M.D., University of California, San Francisco Medical School 1961; Internship 1961-62, Residency 1962-66, Harbor General Hospital; American Board of Dbstetrics and Gynecology.

Obstetrician and Gynecologist, Second General Hospital, Landstuhl, Germany 1966-69; Assistant Professor of Obstetrics and Gynecology, University of Southern California Medical Center 1969-73.

Member: American College of Dbstetricians and Gynecologists; Society of Gynecologic Investigation; Alpha Omega Alpha 1961; Editorial Board: Perinatology-Contemporary DB-GYN 1972- ; Journal of Family Practice 1973- .

NORBERT FREINKEL, M.D. -- Director, Center for Endocrinology, Metabolism and Nutrition since 1973; Chief, Section of Endocrinology and Metabolism and Director of Endocrine Clinics, Northwestern University Medical School since 1966.

A.B., Princeton University 1945; M.D., New York University, College of Medicine 1949; Internship and Residency, Bellevue Hospital 1949-50; Research Fellow in Medicine, Harvard Medical School and Thorndike Memorial Laboratory, Boston City Hospital 1952-55; Overseas Research Fellow, Institute of Animal Physiology, Babraham, Cambridge.

Instructor in Medicine 1956-59, Associate 1959-62, Assistant Professor 1962-66, Harvard Medical School; Director, Diabetes and Metabolism Division, Thorndike Memorial Laboratory, Boston City Hospital 1957-66; Visiting Scientist, Institute of Animal Physiology, Babraham, Cambridge 1969-7D; Professor of Biochemistry, Northwestern University Medical School 1966- .

Member: Fellow, American College of Physicians; American Diabetes Assn.; American Physiological Society; American Society for Clinical Investigation; American Thyroid Assn.; Central Society for Clinical Research; Endocrine Society; Phi Beta Kappa; Alpha Omega Alpha; Sigma Xi; Editorial Board: Journal of Clinical Endocrinology and Metabolism; Journal of Laboratory and Clinical Medicine; Annual Review of Medicine; Journal of Clinical Investigation.

WILFRED Y. FUJIMOTO, M.D. -- Assistant Professor, Department of Medicine, University of Washington since 1971.

B.A., Johns Hopkins University 1962; M.D., Johns Hopkins Medical School 1965; Internship, Residency in Medicine, Columbia-Presbyterian Medical Center 1965-67; Residency, University of Washington School of Medicine 1969-7D; Senior Fellow, Department of Medicine, University of Washington; American Board of Internal Medicine 1970.

Instructor in Medicine, Department of Medicine, University of Washington 197D-71; Attending Physician, Harborview Medical Center 1971-, University Hospital, Seattle 1971-; Attending Physician, Medical Service, U.S. Public Health Service Hospital since 1974.

Member: American Diabetes Assn.; American Federation for Clinical Research; Endocrine Society; Phi Beta Kappa; Alpha Dmega Alpha.

KENNETH HESKEL GABBAY, M.D. -- Director, Cell Biology Laboratory and Associate Physician, Endocrine Division, Children's Hospital Medical Center, Boston since 197D; Associate Professor of Pediatrics, Harvard Medical School since 1975.

B.S., City College of New York 1956; M.D., University of Rochester School of Medicine 1961; Internship, Sinai Hospital 1961-62; Residency, Sinai Hospital 1962-63 Baltimore; Research Fellow, Department of Pediatrics, Albert Einstein College of Medicine 1963-64; Clinical and Research Fellow in Diabetes, Massachusetts General Hospital 1964-66; Board Eligible in Internal Medicine.

Clinical Assistant in Medicine 1966-7D, Instructor in Pediatrics 1970-71, Assistant Professor of Pediatrics 1971-74, Harvard Medical School; Assistant in Medicine, Boston City Hospital 1966-7D; Senior Surgeon, USPHS 1966-68; Deputy Chief, Diabetes and Arthritis Field Research Section, Director, Cell Biology Laboratory 1968-7D.

Member: American Diabetes Assn.; American Federation for Clinical Research; Endocrine Society.

PIERRE M. GALLETTI, M.D., Ph.D. -- Vice President, Biology and Medicine, Brown University since 1972; Professor of Medical Science, Brown University since 1967.

B.A., S. Maurice College 1945; M.D., University of Lausanne 1951; Ph.D., University of Lausanne 1954; Residency, University of Zurich 1954-57; Research Fellow, Institute for Medical Research, Cedars of Lebanon Hospital 1957-58.

Instructor in Physiology, University of Lausanne 1952-54; Assistant Professor of Physiology 1958-62, Associate Professor of Physiology 1962-66, Professor of Physiology 1966-67, Emory University; Eleanor Roosevelt fellow, University of Palermo 1964-65; Chairman, Division of Biological and Medical Sciences, Brown University 1968-72.

Member: American Society for Artifical Internal Organs, President 1969-70; American Heart Assn.; American Physiological Society; Swiss Physiological and Pharmacological Society; Fellow, American College of Cardiology; American Assn. for the Advancement of Science; Biomedical Engineering Society; Editor, Cardiologia 1966-68, Editor-in-Chief 1968-; Editorial Board, Jouranl of Biomedical Material Research 1966-.

DM P. GANDA, M.D. -- Research Fellow in Internal Medicine, Joslin Research Laboratory 1973-75.

M.B.B.S., University of Rajasthan 1966; M.D., All India Institute of Medical Sciences 197D; Internship, S.M.S. Hospital 1966; Residency, All India Institute of Medical Sciences 1968-70; Lemuel Shahuck Hospital, Tufts University School of Medicine 1971-72; Fellow in Endocrinology and Metabolism, VA Hospital Boston, Tufts University School of Medicine 1972-73; American Board of Internal Medicine 1973.

Member: American College of Physicians; American Society of Internal Medicine.

CLAIR L. GARDNER, D.D.S. -- Acting Director, National Institute of Dental Research, NIH since 1975; Associate Director for Extramural Programs, NIDR, NIH since 1972.

D.D.S., Loyola University of the South 1955; Internship, USPHS Hospital 1955-56.

Staff Dental Officer, Public Health Service, Indian Health Hospital 1956-57; Assistant Chief, Dental Services, Division of Dental Health 1957-59; Area Dental Dfficer, Public Health Service, Indian Health Area Office 1959-62; Chief, Program Planning Office 1962-67, Acting Associate Director for Extramural Programs 1967-68, Associate Director for Special Programs 1967-69, Deputy Director 1969-73, NIDR, NIH.

Member: American Dental Assn.; American Assn. for the Advancement of Science; American Public Health Assn.; American Assn. of Dental Schools; Dmicron Kappa Upsilon 1971.

CLIFFORD F. GASTINEAU, M.D., Ph.D. -- Professor of Internal Medicine since 1973, Staff member since 1950, Mayo Clinic.

B.A. 1941, M.D. 1943, University of Oklahoma; Ph.D., University of Minnesota 195D; Internship,

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University Hospitals, University of Colorado 1944; Residency, Mayo Foundation, Mayo Clinic 1944-49; American Board of Internal Medicine 1951; American Board of Internal Medicine (endocrinology and metabolism) 1972; American Board of Internal Medicine re-certification 1974.

Instructor in Internal Medicine 1950-55; Assistant Professor of Internal Medicine 1955-63; Associate Professor of Internal Medicine and Nutrition 1963-70; Professor of Clinical Medicine 1970-73, Mayo Clinic.

Member: American Assn. for the Advancement of Science; Fellow, American College of Physicians; American Diabetes Assn.; American Federation of Clinical Research; American Society for Clinical Nutrition; Central Clinical Research Club, President 1969; Central Society for Clinical Research; Endocrine Society; Sigma Xi; Editorial Board: Forecast, Journal of Diabetes.

SAUL M. GENUTH, M.D. -- Director, Radio Isotope Laboratory, Division of Medicine since 1966; Director Saltzman Institute for Clinical Investigation since 1968, Mt. Sinai Hospital.

Premedical, Harvard University 1953; M.D. Case Western Reserve University, School of Medicine 1957; Internship 1957, Residency 1958-59, Mt. Sinai Hospital; Duke University Hospital 1961-62; Fellow in Endocrinology, Duke University Hospital 1962-64; American Board of Internal Medicine 1964; American Board of Internal Medicine, Subspecialty Boards in Endocrinology and metabolism 1972.

Assistant in Medicine 1964-66, Associate in Medicine 1966-68, Mt. Sinai Hospital; Clinical Instructor 1964-70, Assistant Professor 1970-73, Associate Professor 1973- , Case Western Reserve University, School of Medicine.

Member: American Diabetes Assn.; Endocrine Society; Central Society for Clinical Research; American College of Physicians; American Federation for Clinical Research.

GODFREY SHALOM GETZ, D.Phil.-- Associate Dean in the College, Associate Dean in Division of Biological Sciences, University of Chicago since 1974; Professor in Pathology and Biochemistry, University of Chicago since 1972.

B.Sc., Witwatersrand University 1951; M.B.B.Ch., Witwatersrand 1954; B.Sc., Witwatersrand University 1955; Ph.D., Oxford University 1963; House Physician, Johannesburg General Hospital 1955; House Surgeon, Coronation Hospital 1955-56.

Demonstrator in Biochemistry, University of Oxford 1956-59; Lecturer in Chemical Pathology, Witwatersrand University 1959-63; Research Associate in Department of Biological Chemistry, Harvard Medical School 1963-64; Assistant Professor in Pathology and Research Associate in Biochemistry 1964-67, Director of Research Chemistry Laboratory, Department of Pathology 1965-, Associate Professor in Pathology and Biochemistry 1967-72, University of Chicago.

Member: American Scoiety of Biological Chemists; American Society of Pathologists and Bacteriologists; American Heart Assn.; Biochemical Society; Sigma Xi; Editorial Board, Experimental and Molecular Pathology 1967-.

MARVIN L. GLIEDMAN, M.D. -- Chief, Department of Surgery, Montefiore Hospital and Medical Center since 1967; Chairman, Department of Surgery, Albert Einstein College of Medicine since 1972.

B.A., Syracuse University 1950; M.D., State University of New York, Downstate Medical Center 1954; Internship, University of Minnesota Hospital 1954-55; Residency, Kings Country Hospital Center 1955-56, 1958-60, U.S. Naval Hospital, St. Albans 1956-58; American Board of Surgery 1963.

Officer-in-Charge, Cardiopulmonary and Surgical Research Laboratories, U.S. Naval Hospital 1956-58; Assistant Instructor in Surgery 1959-60, Assistant Professor 1960-64, Associate Professor 1964-66, State University of New York, Downstate Medical Center; Professor of Surgery, Albert Einstein College of Medicine 1967-.

Member: American Surgical Assn.; American College of Surgeons, President, Bronx Chapter 1974; New York Academy of Sciences; Assn. for the Advancement of Medical Instrumentation; American Society for Artificial Internal Organs; International Society of Surgery; International College of Angiology: International Cardiovascular Society; Transplantation Society; American Society of Nephrology; American Gastroenterological Assn.; Society for Experimental Biology and Medicine; Society for Vascular Surgery; The Harvey Society; International Society of Nephrology; Alpha Omega Alpha.

ROBERT A. GOLD, Ed.M.-- Coordinator of the Education Development Component of the National High blood Pressure Education Program (under contract to the National Heart and Lung Institute), Kappa Systems, Inc.

B.A., University of Rochester 1966; Ed.M. Boston University 1967; Fellow, Community Development 1967-68, Human Relations 1968-69, Boston University Human Relations Center.

Psychological Counselor, Boston University, College of Liberal Arts 1966-67; Psychological Counselor, Industrial School for Boys 1967-68; Instructor and Counselor, Department of Psychology, College of Basic Studies 1968-69, Clinical Practicum Supervisor, Counselor, Education Department, Graduate School of Education 1969-70, Boston University; Research Consultant 1968-69, Research Associate 1969-70, Assistant Director of Research 1970-71, Coordinator of Professional Education of the National High Blood Pressure Education Program (under contract to the National Heart and Lung Institute), Kappa Systems, Inc. 1973-75.

NELSON D. GOLDBERG, Ph.D. -- Professor of Pharmacology, Department of Pharmacology since 1972, Professor of Pathology, Department of Laboratory Medicine and Pathology, since 1973, University of Minnesota School of Medicine.

B.S., University of Toledo 1953; Ph.D., University of Wisconsin 1963; Postdoctoral Research Fellow, USPHS, Washington University School of Medicine 1962-64.

Instructor in Pharmacology 1964-65, Assistant Professor of Pharmacology 1965-68, Associate Professor of Pharmacology 1968-72, Department of Pharmacology, University of Minnesota School of Medicine.

Member: American Society for Biological Chemists; American Society for Pharmacology and Experimental Therapeutics; American Society for Neurochemistry; New York Academy of Sciences; Fellow, American Institute of Chemists; American Assn. for the Advancement of Science; Sigma Xi; Editorial Board: Advances in Cyclic Nucleotide Research.

SAMUEL GOLDSTEIN, M.D. -- Associate Professor of Medicine since 1972, and Associate in Biochemistry since 1974, McMaster University.

M.D., University of Manitoba 1961; Internship 1961-62, Residency 1962-63, St. Boniface General Hospital; Residency, Joslin Diabetes Clinic and New England Deaconess Hospital 1964; Research Fellow, Department of Biochemistry and Medicine, Harvard Medical School and Peter Bent Brigham Hospital 1964-66; Research Fellow, Department of Bacteriology 1966-67, Research Fellow, Pediatrics 1967-68, Harvard Medical School; Research and Clinical Fellow, Pediatrics, Massachusetts General Hospital 1967-68.

Assistant in Medicine, Peter Bent Brigham Hospital 1964-67; Assistant in Pediatrics, Harvard Medical School 1968; Assistant in Pediatrics, Massachusetts General Hospital 1968; Assistant Professor of Medicine, McMaster University 1969-72.

Member: American Diabetes Assn.; Tissue Culture Assn.; American Society of Human Genetics; American Assn. for the Advancement of Science; American Federation of Clinical Research; American Geriatrics Society; Gerontological Society; Canadian Society for Clinical Investigation; Canadian Medical Assn.; Canadian Assn. on Gerontology, Founding Member; Canadian Society of Endocrinology; Canadian Diabetic Assn.

PHILLIP GORDEN, M.D. -- Senior Investigator, Diabetes Branch, and Clinical Director, National Institute of Arthritis, Metabolism, and Digestive Disease, NIH since 1974.

B.A., Vanderbilt University 1957; M.D., Vanderbilt University School of Medicine 1961; Internship, Yale University 1961-62; Residency, Yale University

1962-64; USPHS Clinical Fellow, Yale University 1964-65; USPHS Research Fellow, Yale University 1965-66; American Board of Endocrinology and Metabolism; American Board of Internal Medicine.

Senior Investigator, Clinical Endocrinology Branch, National Institute of Arthritis, Metabolism, and Digestive Disease, NIH 1966-74.

Member: Fellow, American College of Physicians; American Federation for Clinical Research; American Society for Clinical Investigation; Endocrine Society; Alpha Omega Alpha; Editorial Board, Journal of Clinical Endocrinology.

ANNETTE THERESE GORMICAN, Ph.D. -- Associate Professor, Department on Nutritional Sciences College of Agricultural and Life Sciences, Director, Dietetic Internship and Associate Director Hospital Food Services, University of Wisconsin since 1967.

B.S., College of St. Catherine 1946; M.S., University of Iowa 1947; Ph.D., University of Iowa 1965; Internship University of Iowa 1947; NIH Predoctoral Fellow 1964-65; Mary Swartz Rose Fellow 1963-64; E.I. Raitt Fellow 1964-65.

Chief Dietitian, University of Chicago Clinics 1950; Administrative Dietitian, Fairview Hospital 1951; Administrative Dietitian, Midway Hospital 1952; Instructor 1952-54, Assistant Professor 1955-60, Division of Nutrition School of Home Economics, University of Minnesota; Clinic Dietitian, Diabetes Clinic, University of Minnesota Hospitals 1952-60; Educational Director of Dietetics, University of Wisconsin Medical Center 1961-62; Therapeutic Dietitian, Department of Internal Medicine, University of Iowa 1962-64; Assistant Professor of Nutrition, Univeristy of Nebraska College of Medicine 1965-66.

Member: American Institute of Nutrition; Fellow, American Institute of Chemists; APHA; New York Academy of Sciences; American Dietetic Assn.; Wisconsin Diabetes Assn.; American Assn. for the Advancement of Science; Phi Beta Kappa; Omicron Nu; Sigma Delta Epsilon; Iota Sigma Pi; Sigma Xi.

KURT GORWITZ, M.P.A., Sc.D. -- Assistant Director for Research and Special Studies, Office of Health and Medical Affairs since 1973; Assistant Professor, University of Maryland Psychiatric Institute.

B.B.A., City College of New York 1950; M.S., Columbia University School of Public Health 1955; M.P.A., Syracuse University, Maxwell School of Public Administration 1955; Sc.D., Johns Hopkins University, School of Public Health 1966.

Public Administration Intern, New York Department of Mental Hygiene 1950-51; Biostatistician, New York State Dept. of Health 1951-55; Director of Vital Statistics, St. Louis City Health Department 1955-58; Director of Mental Health Statistics, Maryland Department of Mental Hygiene 1958-1969; Director of Statistics and Vital Records, Maryland Department of Health and Mental Hygiene 1969-70; Director of Center for Health Statistics, Michigan Department of Public Health 1970-73; Instructor, Johns Hopkins University School of Hygiene and Public Health and Phipps Psychiatric Institute.

Member: Fellow, American Assn. for the Advancement of Science; American Statistical Assn.; American Assn. of Suicidiology; Society for Epidemiological Research.

ROBERT GOTTSEGEN, D.D.S. -- Professor of Dentistry, Division of Periodontics, and Director, Continuing Education, Columbia University School of Dental and Oral Surgery since 1969.

A.B., University of Michigan 1939; D.D.S., Columbia University 1943; USPHS, NIH Postdoctoral Research Fellow in Dentistry, Columbia University 1948-50; American Board of Peridontology.

Attending Dental Surgeon, Presbyterian Hospital 1969- .

Member: American Academy of Periodontology, President 1970-71; Editorial Board: Journal of American Society of Periodontics.

JERE EDWIN GOYAN, Ph.D. -- Dean, School of Pharmacy since 1967, Professor of Pharmacy and Pharmaceutical Chemistry since 1965, University of California.

B.S., University of California School of Pharmacy 1952; Ph.D., University of California 1957.

Assistant Professor 1956-61, Associate Professor of Pharmacy 1961-63, University of Michigan; Associate Professor of Pharmacy and Pharmaceutical Chemistry 1963-65, Chairman Department of Pharmacy 1965-67, Associate Dean, School of Pharmacy 1966-67, University of California, Reader-Consultant, DHEW, Bureau of Health Resources Development 1974-.

Member: Fellow, American Assn. for the Advancement of Science; New York Academy of Sciences; American Pharmaceutical Assn.; Academy of Pharmaceutical Sciences; APHA; Phi Lambda Upsilon; Fellow, American College of Apothecaries; Sigma Xi; Rho Chi Society.

ALAN L. GRABER, M.D. -- Assistant Clinical Professor of Medicine, Vanderbilt University since 1971.

A.B., Princeton University 1957; M.D., Washington University Medical School 1961; Internship, Vanderbilt University Hospital 1961-62; Residency, Vanderbilt University Hospital 1962-63, University of Washington 1965-66; Research Fellow in Endocrinology, Vanderbilt University Hospital 1963-64; Research Fellow in Endocriniology, University of Washington 1965-65; American Board of Internal Medicine 1968-1974; Board of Endocrinology 1972.

Assistant Professor of Medicine, Vanderbilt University 1968-71.

Member: American Diabetes Assn.; American Federation of Clinical Research, American College of Physicians; Alpha Omega Alpha 1961.

GEROLD MORTON GRODSKY, Ph.D. -- Research Biochemist, Metabolic Research Unit, University of California since 1968; Professor of Biochemistry, University of California since 1968.

B.S. 1947, M.S. 1948, University of Illinois; Ph.D., University of California at Berkeley 1955.

Assistant Research Biochemist, Department of Medicine 1955-60, Assistant Professor of Biochemistry and Assistant Research Biochemist, Metabolic Research Unit and Department of Medicine 1960-64, Associate Professor of Biochemistry and Associate Research Biochemist, Metabolic Research Unit and Department of Medicine 1964-68, University of California, San Francisco.

Member: American Society for Biological Chemists; American Federation for Clinical Research; Society for Experimental Biology and Medicine, Endocrine Society, American Diabetes Assn.; Sigma Xi; New York Academy of Sciences.

DIANA W. GUTHRIE, R.N., M.S.P.H., F.A.A.N. -- Assistant Professor, Department of Nursing, Clinic Manager and Nurse Specialist, Wichita State University since 1974.

R.N., Independence Sanitarium and Hospital 1956; B.S., University of Missouri 1957; M.S.P.H., Univerisith of Missouri 1969.

Relief Night Supervisor 1957, Charge Nurse Pediatrics 1957-58, Head Nurse 1958-60, University of Missouri Medical Center; Red Cross Nurse, U.S. Naval Air Station, Sangley Point, Phillipines 1961-63; Charge Nurse Pediatrics 1963-64, Acting Head Nurse, Newborn Nursery 1964, Research Assistant and Diabetes Nurse Consultant 1967-73, University of Missouri Medical Center; Diabetes Nurse Consultant, Saint Francis Hospital, Saint Joseph Hospital, and Allied Health Professions Staff of Wesley Medical Center, Wichita, 1973- ; Education Director, Kansas Diabetes Youth Program 1973-74; Instructor, Department on Nursing, Clinical Nurse 1974, Wichita State University; Education Director, Kansas Diabetes Assn. 1974-75.

Member: American Nurses Assn.; Chairman, Columbia Unit 1972-73; American Diabetes Assn., Co-Director, Seventh Allied Health Conference 1975; Kansas Diabetes Assn., Board of Directors 1974-78; Fellow, American Academy of Nursing 1974; Sigma Theta Tau; Sigma Xi.

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JEAN PIERRE HABICHT, M.D., Ph.D., Dr.P.H. -- Special Assistant to the Director, Division of Health Examination Statistics, National Center for Health Statistics, Health Resources Administration, USPHS, DHEW since 1974.

M.D., Universities of Geneva and Zurich 1962; Ph.D., Massachusetts Institute of Technology 1965; M.P.H., 1968, Dr.P.H., Harvard School of Public Health 1968; Internship, Children's Hospital Medical Center and Massachusetts General Hospital 1965-66; American Board of Nutrition 1968.

Research Assistant, Institute for Therapeutic Research 1958-59; Research Associate, Department of Nutrition and Food Science, Massachusetts Institute of Technology 1963-64; Medical Dfficer, World Health Organization and Head, Biomedical and Epidemiological Section, Division of Human Development, Instituto de Nutricion de Centro America Y Panama 1969-74; Extraordinary Professor 1972, Professor 1973-74, Maternal and Child Health CDSNA-INCAP/University of San Carlos.

Member: World Health Organization; Sigma Xi; Delta Omega.

LILLIAN HADDOCK-SUAREZ, M.D. -- Director, Diabetes Program, Department of Health, Puerto Rico since 1970; Professor of Medicine, University of Puerto Rico School of Medicine since 197D.

B.S., University of Puerto Rico 195D; M.D., Temple University School of Medicine 1954; Internship, Bayamon District Hospital 1954-55; Residency, San Juan City Hospital 1955-57; National Board of Medical Examiners 1955; American Board of Internal Medicine 1964; American Board of Endocrinology and Metabolism 1972.

Associate in Medicine 1959-6D, Assistant Professor of Medicine 1960-65, Chief, Section of Endocrinology and Diabetes 1960-, Associate Professor of Medicine 1965-7D, University of Puerto Rico School of Medicine; Attending in Internal Medicine, VA Hospital, Caparra Heights 1961-67.

Member American Diabetes Assn.; Endocrine Society; American Federation for Clinical Research; American Assn. for the Advancement of Science; New York Academy of Sciences; Fellow, American College of Physicians; Alpha Omega Alpha 1972.

MARGARET HALEY, M.A., -- Research Editor, Kappa Systems, Inc., Arlington, Va., since August 1975.

B.A., Oklahoma College for Women, 1949; M.A., 1954, and Ph.D. candidate, 1959, University of Oklahoma.

Graduate Teacher, 1953-58, and Southern Fellow, 1958-59, University of Dklahoma; Instructor of English, University of New Mexico, 1959-63; Instructor of English, University of Denver,1963-67; Assistant Professor of English, Wichita State University, 1967-71; Editorial and educational consultant, Disclosure Journal, Silver Spring, Md., 1972-73; Editorial Consulting and Free Lancing, Washington, D.C. area, 1974-75.

DRIDN DDNALD HEGRE, Ph.D. -- Associate Professor, University of Minnesota since 1974.

B.A., University of Minnesota 1964; Ph.D., University of Minnesota 1968; Postdoctoral Fellowship, USPHS 1968-69; Resident Fellow, University of Minnesota 1969-70.

Assistant Professor, University of Minnesota 197D-74.

Member: Sigma Xi.

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D.P.M., Temple University, School of Podiatry 1957; Residency, Temple University and St. Luke's and Children's Medical Center 1957-58; Residency, St. Luke's and Children's Medical Center 1958-59.

Coordinator, Podiatric Residency Program 1959-68, Co-Chief Department of Podiatry 1968-, Director of Podiatric Education 1968-, St. Luke's and Children's Medical Center; Director of Clinical Research 1963-64, Professor of Podiatry and Coordinator of Clinics 1964-7D, Professor of Podiatry and Chairman, Department of Community Health 197D-, Chairman Research Committee 1972-74, Pennsylvania College of Podiatric Medicine, Affiliate Staff, Division of Endocrinology, Thomas Jefferson University Hospital since 1973.

Member: DHEW, USPHS, NIH, Podiatry Review Committee 1968-72; American Podiatry Assn., Chairman 1971-73, Liaison Committee, American Board of Podiatric Surgery 1966-71; American Board of Podiatric Orthopedics, Founding Board Member; Pennsylvania Podiatry Assn. 1957, Chairman, Committee on Public Health 1965-68; Royal Society of Health, American Geriatrics Society, American College of Foot Orthopedists; American Society of Podiatric Dermatology; American Diabetes Assn.; American Assn. of Hospital Podiatrists; Gerontological Society; National Board of Podiatry Examiners; American Assn. of Diabetes Educators; American Podiatry Assn.; Phi Alpha Pi; Special Editor, Journal of the American Podiatry Association 1973-.

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A.A., Kings College 1966.

Administrative Assistant and Teacher-Counselor, Education Improvement Program, Duke University 1966-69; Assistant on Personnel to Director of Industrial Relations Division, American Trucking Assn. 1970-72; Membership Coordinator, American Land Development Assn. 1972-74; Special Assistant on Programs, Overseas Development Council 1974-75.

JULES HIRSCH, M.D. -- Professor, Senior Physician to the Hospital, Rockefeller University and Hospital since 1967.

Southwestern Medical School, University of Texas 1948; Internship, Duke Hospital 1948-5D; Residency, New York State College of Medicine 195D-52; American Board of Internal Medicine 1957; American Board of Nutrition 1967.

Instructor in Medicine, New York State College of Medicine 1952; Assistant Professor, Associate Physician 1956-6D, Associate Professor, Physician to the Hospital 196D-67, Rockefeller University and Hospital.

Member: American Assn. for the Advancement of Science; American Federation for Clinical Research; American Institute of Nutrition; American Dil Chemistry Society; American Society for Clinical Investigation; American Society for Clinical Nutrition; American Heart Assn.; Society for Experimental Biology and Medicine; American Psychosomatic Society; Harvey Society; Sigma Xi; Alpha Dmega Alpha; Editorial Board, Archives of Internal Medicine 1968-, Psychosomatic Medicine 1968-, The Medical Letter 1967-; Associate Editor, Journal of Lipid Research 1959-68; Editor, Journal of Nutrition 1962-67.

JOSEPH J. HDET, M.D. -- Professor in Medicine, Faculty of Medicine, Louvain University; Chief, Laboratory of Clinical Research, University Hospital of Louvain.

M.D., Louvain University 1951; House Officer in Medicine, Peter Bent Brigham Hospital 1954-55; British Council Scholar, Department of Pathology, Downing College 1951-52; Research Fellow, Harvard University 1955-56; Board of Internal Medicine 1957.

Member: Endocrine Society; American Diabetes Assn.; New York Academy of Sciences; Societe Belge de Medceine Interne; Societe Belge d'Endodrinologie; Assn. Europeenne pour L'Etude du Diabetes; Assn. des Diabetologues de Langue Francaise; Societe Francaise d'Endocrinologie; European Society for Clinical Investigation; British Diabetic Assn.; European Diabetes Epidemiology Study Group; Fellow, Royal Society of Medicine; Societe Belge de Recherches Cliniques, President 1961; Editorial Board, International Diabetes Federation 197D.

JDAN WILLIAMS HOOVER -- President Parents of Diabetics; Chairman, National Conference on Diabetes in Youth.

Chairman, American Diabetes Assn. Coordinating Committee on Fund Raising and Administration; Columnist, Diabetes Forecast Magazine; Board of Directors, Washington, D.C. Affiliate, American Diabetes Assn.; Chairman, Committee on Support of Research, American Diabetes Assn.; Member of Washington Planning and Housing Assn.

ROBERT L. JACKSON, M.O. -- Professor, Department of Pediatrics, University of Missouri since 1973.

B.S., University of Notre Dame 1930; M.D., University of Michigan 1934; Internship, State University of Iowa 1934-35; Residency, University of Iowa 1935-37, University of Rochester 1935-36; Fellow University of Iowa 1936-37; American Board of Pediatrics 1940.

Instructor to Professor, Department of Pediatrics 1937-54; Professor and Chairman, Department of Pediatrics, University of Missouri 1954-73.

Member: American Pediatric Society; Society for Pediatric Research; American Society of Clinical Nutrition; American Diabetes Assn.; Missouri State Diabetes Assn., Past President; American Heart Assn.; National Academy of Sciences; Alpha Omega Alpha; Sigma Xi.

ROBERT LEANDO JUNGAS, Ph.D. -- Professor, Department of Physiology, University of Connecticut Health Center since 1974.

B.A., St. Olaf College 1956; Ph.D., Harvard University 1961; Research Fellow, Harvard Medical School 1960-63.

Instructor in Biological Chemistry 1963-65, Associate in Biological Chemistry 1965-68; Assistant Professor of Biological Chemistry 1968-71; Associate Professor of Biological Chemistry 1971-74, Harvard Medical School

Member: American Society of Biological Chemists; Biochemical Society; New York Academy of Sciences; Sigma Xi; Phi Beta Kappa.

RONALD KENNETH KALKHOFF, M.D. -- Professor of Medicine and Chief, Endocrine-Metabolic Section, Medical College of Wisconsin since 1974; Associate Professor of Medicine in Pharmacology, Medical College of Wisconsin since 1971.

B.A., Yale University 1956; M.D., Washington University School of Medicine 1960; Internship, St. Louis City Hospital 1960-61; Residency, Barnes Hospital 1961-62, 1964-65; Fellow, Washington University School of Medicine 1962-64; American Board of Internal Medicine 1968.

Instructor in Medicine 1965-66, Assistant Professor of Medicine in Pharmacology 1967-71, Assistant Professor of Medicine 1966-71, Graduate School Faculty 1968-, Associate Professor of Medicine 1971-74, Medical College of Wisconsin.

Member: American Society for Clinical Investigation; American Society of Pharmacology and Experimental Therapeutics; Fellow, American College of Physicians; Central Society for Clinical Research; Endocrine Society; American Federation for Clinical Research; American Diabetes Assn.; Alpha Omega Alpha 1972; Editorial Board, Diabetes 1971-.

PAULA HELENE KANAREK, D.Sc. -- Assistant Professor, Oregon State University since 1975.

B.S., University of Michigan 1967; M.S., Harvard University 1969; D.Sc., Harvard University 1973.

Biostatistician, Massachusetts General Hospital 1968-79; Consulting Statistician, Joslin Diabetes Clinic 1970-72; Acting Assistant Professor 1972-73, Assistant Professor 1973-74, University of Washington.

Member: American Statistical Assn.; Biometric Society; Sigma Xi.

WILLIAM BERNARD KANNEL, M.D., M.P.H. -- Associate in Preventative Medicine, Harvard Medical College since 1960.

M.D., University of Georgia, School of Medicine 1949; M.P.H., Harvard School of Public Health 1959; Internship 1949-50, Residency 1954-56, USPHS, Staten Island; Research and Teaching Fellow, Harvard Medical College 1956-59; American Board of Internal Medicine 1958.

Associate in Preventive Medicine, Harvard Medical College 1961; Director, Heart Disease Epidemiology Study, National Heart Institute 1966; Assistant in Medicine, Peter Bent Brigham Hospital 1956-62; Instructor, Harvard Medical College, Department of Preventive Medicine 1959-60.

Member: Fellow, American Heart Assn.; Alpha Omega Alpha.

MILDRED KAUFMAN -- Administrator, Nutrition Section, Florida Division of Health since 1965.

B.S., Simmons College 1947; M.S., Columbia University Teachers College 1952; Internship, Indiana University Medical Center 1948.

Therapeutic and Teaching Dietitian, Hospital of Woman's Medical College 1948-50, 1952; Nutrition Consultant, Visiting Nurse Society of Philadelphia 1953-56; Nutrition Consultant, Division of Chronic Diseases, USPHS, DHEW 1956-65.

Member: American Dietetic Assn.; Florida Dietetic Assn., President 1971-72; Assn. of State and Territorial Public Health Nutrition Directors, President 1973-74.

NICHOLAS ALEXANDER KEFALIDES, M.D., Ph.D. -- Professor, Department of Medicine since 1974, Professor, Department of Biochemistry and Biophysics since 1975, University of Pennsylvania; Director, General Clinical Research Center, Philadelphia General Hospital since 1972.

B.A., Augustana College 1951; B.S. 1954, M.S. 1956, M.D. 1956, University of Illinois College of Medicine; Ph.D., University of Illinois 1965; Internship 1956-57, Residency, Internal Medicine 1960-62, University of Illinois Research and Educational Hospitals; USPHS Fellow in Infectious Diseases, Department of Medicine, University of Illinois College of Medicine 1962-64.

Instructor in Medicine 1962-64, Assistant Professor of Medicine 1964-65, Department of Medicine, University of Illinois College of Medicine; Chief, Infectious Disease Section, Hines VA Hospital 1964-65; Assistant Professor 1965-69, Associate Professor 1969-70, LaRabida Institute and Department of Medicine, University of Chicago; Chairman, Infectious Diseases Consultation Service, University of Chicago 1967-70; Associate Professor, Department of Medicine 1970-74, Associate Professor, Department of Biochemistry 1973-75, University of Pennsylvania.

Member: American Federation for Clinical Research; American Assn. for the Advancement of Science; International Society of Nephrology; Infectious Diseases Society of America; American Chemical Society; Central Society for Clinical Research, American Society for Clinical Investigation; American Society for Experimental Pathology; American Society of Biological Chemists; American Society of Nephrology; Society for Complex Carbohydrates; Sigma Xi; Editorial Board: Connective Tissue Research 1970- .

GERALD TAMBLING KENT, M.D. -- Associate Clinical Professor of Medicine, Case Western Reserve University since 1958.

A.B., Ohio Wesleyan University 1936; M.D., Case Western Reserve Medical School 1940; Internship 1941-42, Residency 1942-44, University Hospitals of Cleveland; Fellow in Pathology, University Hospitals of Cleveland 1940-41; American Board of Internal Medicine 1947.

Clinical Instructor 1947-52, Assistant Clinical Professor of Medicine 1952-58, Assistant Dean, School of Medicine 1968-70, Case Western Reserve University; Assistant Physician University Hospitals of Cleveland 1946-58.

Member: Fellow, American College of Physicians.

JIN H. KINOSHITA, Ph.D. -- Chief, Laboratory of Vision Research, National Eye Institute, NIH since 1971; Professor of Biochemical Ophthalmology, Howe Laboratory, Harvard Medical School since 1970; Biochemist, Massachusetts Eye and Ear Infirmary since 1956.

A.B., Bard College 1944; Ph.D., Harvard University 1952.

Instructor in Biological Chemistry 1952-56, Associate in Biological Chemistry 1956-57, Assistant Professor in Biological Chemistry 1957-64, Howe Laboratory and the Department of Biological Chemistry, Harvard Medical School; Associate Professor in Biochemical Ophthalmology, Harvard Medical School 1964-70.

Member: Assn. for Research in Vision and Ophthalmology, American Society of Biological Chemist; American Assn. for the Advancement of Science; Gerontology Society; American Chemical Society; Sigma Xi; Associate Editor, Archives of Ophthalmology 1962-64; Editorial Board, Investigative Ophthalmology 1962-68; Editorial Board, Experimental Eye Research 1962-.

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DAVID MORRIS KIPNIS, M.D. -- Director, Washington University Lipid Research Clinic since 1972; Chairman, Department of Internal Medicine, Washington School of Medicine since 1973.

A.B. 1945, M.A. 1949, Johns Hopkins University; M.D., University of Maryland School of Medicine 1951; Internship, Johns Hopkins Hospital 1951-52; Residency, Duke Hospital 1952-54, University Hospital, University of Maryland School of Medicine 1954-55; Research Fellowship, Washington University School of Medicine 1955-56.

Instructor in Biology, Johns Hopkins University, Department of Biology 1946-47; Assistant in Medicine and Pharmacology, University of Maryland School of Medicine 1954-55; Assistant Professor of Biochemistry in Medicine 1957-62, Associate Professor of Medicine 1962-65, Professor of Medicine 1965-73, Washington University School of Medicine; Director, Washington University Clinical Research Center 1960; Physician-in-Chief, Barnes Hospital 1973.

Member: American Society for Clinical Investigation; Central Society for Clinical Research; Assn. of American Physicians; Endocrine Society; Biochemical Society; American Diabetes Assn.; American Federation of Clinical Research; Society for Experimental Biology and Medicine; American Society of Biological Chemists; Alpha Omega Alpha; Sigma Xi; Editorial Board: Diabetes 1964-72, Editor 1973; Endocrinology 1965-72; The American Journal of Medicine 1973; American Journal of the Medical Sciences 1968- .

RUTH L. KIRSCHSTEIN, M.D. -- Deputy Associate Commissioner for Science, Federal Drug Administration since 1973.

A.B., Long Island University 1947; M.D., Tulane University School of Medicine 1951; Internship, Kings County Hospital 1951-52; Residency in Pathology, VA Hospital 1952; Providence Hospital 1952-54; Clinical Center, NIH 1956-57; American Board of Pathology 1957.

Instructor of Pathology, Tulane University Medical School 1954-55; Medical Officer, Pathologist, Laboratory of Viral Products 1957-60, Chief 1960-62, Assistant Chief 1962-64, Laboratory of Viral Immunology and Chief, Section of Pathology, Acting Chief, Laboratory of Pathology 1964-65, Chief, Laboratory of Pathology 1965-72; Assistant Director 1971-72, Division of Biologics Standards, NIH; Acting Deputy Director, Bureau of Biologics, FDA 1972-73; Deputy Associate Commissioner for Science, FDA 1973- .

Member: American Assn. of Immunologists; American Assn. of Pathologists and Bacteriologists; American Society of Microbiology.

ROBERT H. KNOPP, M.D. -- Associate Professor of Medicine, University of Washington since 1974; Deputy Director, Northwest Lipid Research Clinic since 1974; Attending Physician, Harborview Medical Center since 1974.

A.B., Colgate University 1960; M.D., Cornell University Medical College 1964; Internship 1964-65, Residency in Medicine 1965-66, Boston City Hospital; Diabetes and Metabolism 1966-67, Research Fellow in Endocrinology and Metabolism 1967-68, Northwestern University Medical Center; American Board of Internal Medicine 1972.

Instructor in Medicine 1970-71; Assistant Proessor of Medicine 1971-74, Harvard Medical School; Research Associate, Thorndike Memorial Laboratory 1970-71.

Member: American Diabetes Assn.; American Assn. for the Advancement of Science; American Federation for Clinical Research; Endocrine Society; Alpha Omega Alpha; Phi Beta Kappa.

JOHANNES KÖBBERLING, M.D. -- Head, Endocrinology Unit, Department of Medicine, University of Göttingen since 1974.

M.D., University of Göttingen, 1965; Internship, 1965-66; Research Fellow, Department of Human Genetics, University of Göttingen 1967-68.

Scientific Assistant, Department of Internal Medicine, University of Göttingen 1968; Visiting Fellow, University of Michigan 1973.

ARTHUR F. KOHRMAN, M.D. -- Associate Professor, Department of Human Development and Office of Medical Education, Research and Development, College of Human Medicine, Michigan State University since 1971.

B.S., University of Chicago 1955; M.D., Western Reserve University School of Medicine 1959; Internship, Cleveland Metropolitan General Hospital 1959-60; Residency, Pediatrics and Infectious Diseases, Cleveland General Hospital and University Hospitals of Cleveland 1960-62; Josiah Macy Fellowship, Western Reserve University School of Medicine 1957; Fellow, NIH Post-Doctoral Fellow, Stanford University 1967-68; National Board of Medical Examiners; American Board of Pediatrics 1971.

Assistant Professor, Department of Human Development 1968-71, Assistant Professor, Office of Medical Education Research and Development 1970-71, College of Human Medicine, Michigan State University; Director of Laboratories, Director of Educational Activities, Director Human Development Course, Department of Human Development, Director Pediatric Endocrine Clinic 1970-, Acting Co-Chairman, Department of Human Development 1971, Associate Chairman, Department of Human Development, College of Human Medicine 1972-, Director Clinical Sciences Education 1974-, Michigan State University.

Member Society for Pediatric Research; American Assn. for the Advancement of Science; American Academy of Pediatrics; Lawson Wilkins Pediatric Endocrine Society; American Federation for Clinical Research; Michigan Diabetes Assn; Alpha Omega Alpha.

JOYCE ELAINE KORTMAN -- Board of Directors, American Diabetes Assn. since 1974; Advisory Board, National Institute of Arthritis, Metabolism, and Digestive Diseases since 1972.

Chairman, Committee to Establish Comprehensive Diabetes Training for Patient and Nurse at Holland City Hospital 1971; Michigan Comprehensive Health Planning Advisory Council 1972; West Michigan Planning Unit for Michigan Comprehensive Health Planning, Michigan Health Council.

Member: American Diabetic Assn.

LEO P. KRALL, M.D. -- Senior Staff, Joslin Clinic and New England Deaconess Hospital since 1954.

B.A., Pacific Union College 1938; M.D., Loma Linda University School of Medicine 1943; Internship 1943, Residency 1949-50, United States Marine Hospital; Fellow in Internal Medicine, New England Deaconess Hospital and Joslin Clinic 1947-48.

Instructor in Medicine, Loma Linda University School of Medicine 1950; Deputy Chief of Medicine, United States Marine Hospital 1952-53; Staff, Boston Hospital for Women since 1954; Vice-President and Member, Board of Trustees, Director, Education Division, Joslin Diabetes Foundation, Inc. since 1968.

Member: American Diabetes Assn.; American Federation for Clinical Research; American Society of Internal Medicine; Endocrine Society, Latin American Diabetes Assn.; Sociedad Argentina de Diabetes; Venezuean Diabetes Assn.; Dominican Diabetes Assn.; Alpha Omega Alpha 1968; Editorial Board: ADA Forecast; Metabolism; Massachusetts Physician; Masachussetts Internist.

STANLEY N. KRANCZER -- Supervising Research Assistant in the Statistical Bureau of Metropolitan Life Insurance Company since 1961.

B.S., Brooklyn College 1959; M.B.A., Baruch School of Business Administration, City College of New York 1964.

Junior Accountant with Private Firm 1959-60; Statistician, New York City Department of Records and Statistics 1961.

Member: Population Assn. of America.

NORMAN KRETCHMER, M.D., Ph.D. -- National Institute of Child Health and Human Development since 1974.

B.S., Cornell University 1944; M.S., 1945, Ph.D.

1947, University of Minnesota; M.O., State University of New York, College of Medicine 1952; Internship, Montefiore Hospital 1952-53; Residency, Pediatrics, New York Hospital 1953-55; Commonwealth Fund Fellow, Montefiore Hospital 1952-53; Commonwealth Fund Traveling Fellowship, St. Mary's Hospital, London and University of Paris 1957; American Board of Pediatrics 1957.

Assistant Professor of Pathology and Biochemistry, University of Vermont 1947-48; Fellow and Research Associate of Pathology, Long Island College of Medicine 1948-52; Assistant Professor of Biochemistry, Pediatrics 1953-56, Assistant Professor 1956-58, Associate Professor of Pediatrics 1958-59, Cornell University; Professor and Executive Head, Pediatrics 1959-69, Chief, Division of Developmental Biology 1969-72, Chairman, Program in Human Biology 1969-72, Professor of Pediatrics 1969-74, Stanford University; Chief, Section of Oevelopmental Medicine, Stanford University since 1972; Clinical Professor, Pediatrics, Howard University since 1974.

Member: Fellow, American Academy of Pediatrics; Fellow, American Assn. for the Advancement of Science; American Chemical Society; American Institute of Biological Sciences; American Pediatric Society; American Society for Biological Chemists; American Society for Clinical Investigation; American Society for Clinical Nutrition; American Society for Human Genetics; Histochemical Society; International Organization for the Study of Human Oevelopment; International Pediatric Assn.; Perinatal Research Society; Society for Growth and Oevelopment; Society for Pediatric Research, President 1967-68; Sigma Xi; Editor: Pediatrici 1959-63; Series in Clinical Pediatrics 1973.

ARTHUR KROSNICK, M.O. -- Senior Public Health Physician, New Jersey State Department of Health since 1954.

A.B., Temple University 1944; M.D., Temple University School of Medicine 1950; Internship, Mercer Hospital; Residency, Presbyterian - University of Pennsylvania Medical Graduate Hospital, University of Pennsylvania; American Board of Internal Medicine 1957.

Chairman, Diabetes Subcommittee, Council on Heart and Vascular Oisease, RMP; Editor: Journal of the Medical Society of New Jersey 1973- .

Member: Consultant, Diabetes and Arthritis Program, USPHS 1956-70; Fellow, New Jersey Academy of Medicine; Fellow, American College of Physicians; American Society of Internal Medicine; American Diabetes Assn.

KEATHA K. KRUEGER, Ph.O. -- Diabetes Program Oirector, Extramural Programs, National Institute of Arthritis, Metabolism and Digestive Diseases, NIH since 1974.

S.B., University of South Oakota 1943; M.S. 1945, Ph.O. 1948, University of Wisconsin.

Assistant Professor of Biochemistry, University of South Oakota Medical School 1948-56; Assistant Editor 1956-59, Associate Editor 1959-60, Chemical Abstracts Service; Associate Editor, Biochemical Sections 1960-63; Scientific Communications Officer, Office of the Associate Director for Program Analysis and Scientific Communications, NIAMDO, NIH, 1963-64.

Member: American Chemical Society; American Assn. for the Advancement of Science; New York Academy of Sciences; American Society for Artificial Internal Organs; American Oiabetes Assn.

CARL KUPFER, M.O. -- Oirector, National Eye Institute, NIH since 1970; Clinical Associate Professor, Howard University, Oivision of Ophthalmology since 1970.

A.B., Yale University 1948; M.D., Johns Hopkins Medical School 1952; Internship 1952-53, Residency 1953-54, Wilmer Institute Research Fellow in Ophthalmology, Wilmer Institute 1957-58; Research Fellow in Ophthalmology, Harvard Medical School 1958-60; American Board of Ophthalmology 1958.

Instructor in Ophthamology 1960-62, Assistant Professor in Ophthalmology 1962-66, Harvard Medical School; Professor and Chairman in Ophthalmology, University of Washington School of Medicine 1966-70; Research Affiliate University of Washington Primate Center 1966-70.

Member: American Physiological Society; Assn. for Research in Ophthalmology; American Academy of Ophthalmology and Otolaryngology; American Ophthalmology Society; Society for the Prevention of Blindness; Editorial Board, Investigative Ophthalmology 1969-; Editorial Board, American Journal of Ophthalmology 1971-.

TOICHIRO KUWABARA, M.O., Ph.D. -- Head, Section on Experimental Pathology, Laboratory of Vision Research, National Eye Institute, NIH since 1972.

M.D., Kyushu University 1944; Ph.D., Kyushu University 1952.

Instructor, Department of Pathology, Kyushu University 1944-52; Assistant in Ophthalmic Research 1952-55, Instructor in Ophthalmic Research 1955-57, Associate in Ophthalmology 1960-66, Associate Professor of Pathology, Oepartment of Ophthalmology 1966-71, Harvard University Medical School; Associate Opthalmic Pathologist, Massachusetts General Hospital 1960-72; Professor of Pathology, Department of Ophthalmology, Harvard University Medical School 1971-74.

Member: Assn. for Research in Vision and Opthalmology; American Assn. for the Advancement of Science; Electron Microscopy Society of America; Cell Biology Society.

PAUL ESTON LACY, M.D., Ph.D. -- Chairman, Department of Pathology, Washington University School of Medicine since 1961.

B.A. 1945, M.D. 1948, M.Sc. 1948, Ohio State University; Ph.D., Mayo Foundation of the Graduate School of the University of Minnesota 1955; Internship, White Cross Hospital 1948-49; Fellow in Pathology, Mayo Clinic 1951-55; Postdoctorate Fellow of the National Cancer Institute, Public Health Service, Oepartment of Anatomy, Washington University School of Medicine 1955-56.

Assistant Instructor, Department of Anatomy, Ohio State University 1944-48; Instructor, Department of Pathology 1956-57, Assistant Professor, Department of 1957-61, Assistant Oean 1959-61, Associate Professor, Oepartment of Pathology 1961, Washington University School of Medicine; Pathologist-in-Chief, Barnes and Allied Hospitals and St. Louis Children's Hospital since 1961.

Member: American Society for Cell Biology; American Assn. of Anatomists; American Assn. of Experimental Pathologists; American Assn. of Pathologists and Bacteriologists; American Oiabetes Assn; International Academy of Pathology; Royal Society of Medicine; Phi Eta Sigma, 1943; Alpha Epsilon Oelta 1944; Phi Beta Kappa 1945; Alpha Omega Alpha 1948; Sigma Xi 1948; Editorial Board: Oiabetes 1973-75; Archives of Pathology 1975; Diabetes; Laboratory Investigation 1967-73

BERNARO ROBERT LANDAU, M.O., Ph.O. -- Professor of Medicine and Professor of Pharmacology, Oirector, Oivision of Endocrinology, Department of Medicine, Case Western Reserve University since 1969.

B.S., Massachusetts Institute of Technology 1947; A.M., Harvard Graduate School of Arts and Sciences 1949; Ph.D., Harvard Graduate School of Arts and Sciences 1950; M.O., Harvard Medical School; Internship, Peter Bent Brigham Hospital 1958-59; Teaching Fellow, Harvard Graduate School of Arts and Sciences; Allied Chemical and Oye Fellow, Harvard Graduate School 1949-50; Fellow, USPHS, Biochemistry, Harvard Medical School 1957-58; Fellow, Commonwealth Fund, Oepartment of Biochemistry, Merck Institute for Therapeutic REsearch 1967-69; American Board of Internal Medicine 1962.

Assistant Professor of Medicine, Assistant Physician, 1959-61, Associate Professor of Medicine, Associate Physician 1962-67, Assistant Professor of Biochemistry 1959-67, Western Reserve University School of Medicine, Established Investigator, American Heart Assn. 1959-64; Oirector of Metabolism Service, University Hospitals, Cleveland 1963-67; Oirector, Oepartment of Biochemistry, Merck Institute for Therapeutic Research.

Member: American Society of Biological Chemist; American Physiological Society, American Federation for Clinical Research; Boylston Society; American Oiabetes Assn.; Endocrine Society; Central Society for Clinical Research; American Society for Clinical Investigation; American Assn. for the Advancement of Science; Cleveland Diabetes Assn.; Fellow, American College of Physicians; Alpha Omega Alpha; Sigma Xi; Editor, American Jouranl of Physiology and Journal of Applied Physiology 1963-66; Editorial Board, Metabolism 1966-67, 1970-73.

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JOSEPH LARNER, M.O., Ph.D. -- Chairman, Oepartment of Pharmacology, University of Virginia School of Medicine since 1969.

M.D., College of Physicians and Surgeons, Columbia University 1945; M.S., University of Illinois 1949; Ph.D., Washington University 1951; Internship, University of Chicago Clinics 1945-46; National Board of Medical Fxaminers 1946; Fellow, NIH 1948-50; Fellow, Life Insurance Medical Research Fund 1950-52.

Instructor, Biochemistry Department, Washington University School of Medicine 1951-53; Assistant Professor, Oivision of Biochemistry, Noyes Chemical Laboratory, University of Illinois 1953-57; Associate Professor of Pharmacology 1962-63, Professor of Pharmacology 1963-64, Case Western Reserve University; Hill Professor of Metabolic Enzymology, Oepartment of Biochemistry, College of Medical Sciences, University of Minnesota 1964-69.

Member: New York Academy of Sciences; American Chemical Society; American Society of Biological Chemists; American Society of Pharmacology and Experimental Therapeutics; American Oiabetes Assn.; Fellow, Royal College of Medicine 1963; Sigma Xi 1951; Alpha Chi Sigma 1954; Phi Eta Sigma 1939; Phi Beta Kappa 1941; Alpha Omega Alpha 1944; Editorial Board: Physiological Chemistry and Physics 1972, Physiological Reviews 1972, Molecular and Cellular Biochemistry 1973; Associate Editor, Journal of Cyclic Nucleotide Research 1974-.

CARL E. LARSON, Ph.O. -- Associate Professor of Speech Communication, University of Oenver since 1974.

Ph.D., University of Kansas 1965.

Director of Evaluation Research, University of Kansas Extension 1962-63; Research Assistant, Kansas Neurological Institute 1964; Instructor, Oepartment of Human Relations, University of Kansas 1963-64; Instructor, Department of Speech, Bowling Green State University 1964-66; Assistant Professor, Department of Communication, University of Wisconsin 1966-69; Associate Professor, Department of Speech Communication, University of Denver 1969-74.

ANN MILLER LAWRENCE, M.D., Ph.D. -- Associate Chief of Staff for Education, VA Gospital, Hines, Illinois since 1974; Professor of Medicine since 1974, Professor of Biochemistry since 1975, Loyola University Stritch School of Medicine, Maywood, Illinois.

A.B., Barnard College, Columbia University 1952; Ph.D., University of California at Berkeley 1957; M.D., University of California at Berkeley and San Francisco School of Medicine 1960; Internship 1960-61, Residency in Medicine 1961-63, University of Chicago Hospitals and Clinics; USPHS Trainee in Endocrinology 1963-64; Internal Medicine Boards 1968.

Assistant Professor 1965-68, Associate Professor 1969-73, Professor 1973-74, Department of Medicine, University of Chicago; Special Reviewer Metabolism Study Section 1973, NIH.

Member: Endocrine Society; Society for Experimental Biology and Medicine; American Assn. of Anatomists; American Oiabetes Assn.; Phi Beta Kappa; Sigma Xi; Iota Sigma Pi; Alpha Omega Alpha; Editorial Board: Journal of Clinical Endocrinology and Metabolism 1970.

PATRICIA A. LAWRENCE, M.A. -- Associate Professor, University of North Carolina School of Nursing since 1973.

B.A., Bates College 1954; M.A., Columbia University Teachers College 1960.

Assistant Head Nurse, New York Hospital, Cornell University Medical Center 1954-57; Staff Nurse, Newton-Wellesley Hospital 1957-58; Assistant Instructor, Cornell University 1958-59; Instructor, New York Hospital School of Nursing 1960-61; Instructor, Rutgers University, College of Nursing 1961-64; Instructor, Assistant Professor, Duke University School of Nursing 1964-70; Associate, Community Health Sciences, Duke Medical Center 1970-73; Educational Director, Diabetes Consultation and Education Service 1970-73.

Member: Phi Beta Kappa

RACHMIEL LEVINE, M.D. -- Director, City of Hope Medical Center since 1971; visiting Associate in Biomedical Engineering, California Institute of Technology since 1973.

B.A., McGill University 1932; M.O., McGill University 1936; Internship, Michael Reese Hospital 1936-37; Fellow, Metabolism and Endocrinology, Michael Reese Hospital 1937-39.

Assistant Director, Oepartment of Metabolism and Endocrinology 1939-43, Oirector, Oepartmentof Metabolism and Endocrinology 1943-59; Chairman, Oepartment of Medical Education 1952-60, Michael Reese Hospital; Professor of Medicine, Chicago Medical School 1958-60; Professor and Chairman, Department of Medicine, New York Medical College 1960-70.

Member: American Oiabetes Assn., President 1964-65; Endocrine Society; Central Society for Clinical Research; American Physiological Society; Fellow, American College of Physicians; Assn. of American Physicians; Fellow, American Academy of Arts and Sciences; Harvey Society, President 1967; New York Academy of Medicine; Assn. for Research in Nervous and Mental Diseases, President 1963; Alpha Omega Alpha; Editorial Board, Metabolism 1950-, Excerpta Medica-Endocrinology 1956-, Diabetes 1960-, Hormone and Metabolic Research 1968-.

ROBERT I.LEVY, M.O. -- Director, National Heart and Lung Institute, NIH since 1975.

B.A., Cornell University 1957; M.O., Yale University 1961; Internship 1961-62, Residency 1962-63, Yale New Haven Medical Center; Residency, NHLI 1965-66; National Board of Medical Examiners 1962.

Clinical Associate, Section on Molecular Oisease, Laboratory of Metabolism, NHLI, 1963-66; Attending Physician, Molecular Disease Branch, NHLI 1965-; Attending Physicien, Georgetwon University Medical Division, District of Columbia General Hospital 1966-68; Deputy Clinical Director 1968-69, Chief, Clinical Service, Molecular Oisease Branch 1969-73, Chief Lipid Metabolism Branch 1970-74, NHLI; Director, Division of Heart and Lung Institute, NIH since 1973-1975.

Member: American Institute of Nutrition; American Federation for Clinical REsearch; American Heart Assn.; New York Academy of Sciences; American Society for Clinical Nutrition; American Society for Clinical Investigation; American College of Cardiology; American Society for Clinical Pharmacology and Therapeutics; Alpha Epsilon Delta; Alpha Omega Alpha; Phi Beta Kappa; Phi Beta Phi; Sigma Xi; Editorial Board, Journal of Lipid Research 1970-, Circulation 1974-.

ARTHUR A. LIKE, M.D. -- Professor Pathology, University of Massachusetts Medical School since 1975.

B.S., City College of New York 1950; M.D., Columbia University College of Physicians and Surgeons 1954; Internship 1954-55, Residency 1955-58, Strong Memorial Hospital, University of Rochester School of Medicine; National Board of Medical Examiners 1955; American Board of Pathology 1959.

Associate and Senior Associate Pathologist, Peter Bent Brigham Hospital 1960-65; Research Associate, Joslin Research Laboratory 1965-75; Insturctor 1960-66, Associate 1966-69, Assistant Professor 1969-71, Associate Professor of Pathology 1971-75, Harvard Medical School.

Member: International Academy of Pathology; American Society for Cell Biology; American Diabetes Assn.; Assn. of Pathologists and Bacteriologists; American Society for Experimental Pathology; American Assn. for the Advancement of Science; Phi Beta Kappa 1950; Editorial Board, Oiabetes.

MORTIMER BROADWIN LIPSETT, M.D. - Professor of Medicine, Case Western Reserve University School of Medicine since 1975; Director, The Cancer Center, Cleveland since 1974.

A.B., University of California 1943; M.S., University of Southern California 1947; M.D., University of Southern California 1951; Internship, Los Angeles County Hospital 1951-52; Residency, Internal Medicine, Sawtelle Hospital, VA 1952-54; Fellow, USPHS, Sloan Kettering Institute 1954-56; American Board of Internal Medicine 1959.

Research Associate 1947, University of Southern California; Research Assistant, Cardiology, University of California 1953-54; Assistant Member, Sloan Kettering Institute 1954-56; American Board of Internal Medicine 1959.

Research Associate 1947, University of Southern California; Research Assistant, Cardiology, University of California 1953-54; Assistant Member, Sloan Kettering Institute 1956-57; Assistant Attending Physician, Memorial Center 1956-57; Instructor in Medicine, Cornell University Medical College 1956-57; Medical Dfficer 1957-59, Assistant Chief 1959-66, Endocrinology Branch, National Cancer Institute; Instructor in Medicine 1957-6D, Associate Clinical Professor in Medicine 196O-, Howard University School of Medicine; Chief, Endocrinology Branch, National Cancer Institute 1966-7D; Associate Scientific Director, Intramural Research, National Institute of Child Health and Human Development 197D-74; Chief Reproduction Research Branch, NICHD 197D-74.

Member: American Assn. for the Advancement of Science; The Endocrine Society for Clinical Investigation; American Federation for Clinical Research; American Assn. for Cancer Research; Fellow, American College of Physicians; Assn. for American Physicians; Society for Study of Reproduction; Sigma Xi; Alpha Omega Alpha; Editor, Steroids 1964-; Editor and Chief, Jouranl of Clinical Endocrinology and Metabolism 1968-73.

DEAN H. LOCKWDOD, M.D. -- Assistant Professor of Pharmacology and Experimental Therapeutics, Director, Diabetes Management Clinic, Johns Hopkins Hospital since 1972; Associate Professor of Medicine, Johns Hopkins School of Medicine since 1974.

A.B., Wesleyan University (Middletown, Conn.) 1959; M.D., Johns Hopkins University School of Medicine 1963; Internship 1963-64, Residency 1964-65, John Hopkins Hospital; Postdoctoral Fellow, Departments of Pharmacology and Experimental Therapeutics and Medicine, Johns Hopkins University School of Medicine 1967-69; Maryland State Board of Medical Examiners 1963.

Staff Associate, Section of Intermediary Metabolism, National Institute of Arthritis and Metabolic Diseases, NIH 1965-67; Assistant Professor of Medicine, Johns Hopkins University School of Medicine 1969-74.

Member: Maryland Diabetes Assn., Board of Directors 1972-; Phi Beta Kappa; Alpha Omega Alpha; Editorial Board, International Journal of Obesity 1975.

CAROLINE LURIE, -- President Elect, National Juvenile Diabetes Foundation and President, Gotham Chapter, Brandeis University, National Council of Jewish Women.

Junior Division of Camp of New York Diabetes Assn., Vice President 1970; A Founder and Vice President, New York Chapter, Juvenile Diabetes Foundation.

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B.A., St. Mary's Dominican College 1964; M.A. 1969, Ph.D. 1973, University of Illinois; NDEA Title IV Graduate Fellowship, University of Illinois 1967-7D; Dominican College Competitive Scholarship 1962-64, 1965-67.

High School Teacher, Djuma, Republique du Congo 1964-65; Instructor of English and World Literature, Louisiana State University in New Orleans 197D-72; Research Associate (Medical Editor) 1973-74 and Instructor 1974-75, Department of Neurology, Louisiana State University Medical Center; Research Associate 1973-74, Instructor 1974-75, Department of Medicine, LSUMC: Medical Writer and Editor, Community Information Coordinator, Specialized Center of Research -- Arteriosclerosis.

Member: American Medical Writers Assn.; Modern Language Assn.; Cardinal Key Honor Society 1967; Who's Who in American Colleges and Universities 1967; Editorial Board: Medical Communications 1974- .

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A.8., University of Kansas 1922; M.D., Harvard Medical School 1927; Internship, Johns Hopkins Hospital 1927-28; Residency, Massachusetts General Hospital 1928-30; American Board of Internal Medicine 1937. Practice of Internal Medicine in Boston 1932-.

Member: American Society for Clinical Investigation; Assn. of American Physicians; American Diabetes Assn., President 1958-59; Endocrince Society; Society for Experimental Biology and Medicine; American Assn. for the Advancement of Science.

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B.S. Colgate University 1955; Ph.D., University of Rochester Graduate School 1958.

Research Assistant, University of Rochester Atomic Energy Project 1955-58; Guest Worker, Laboratory of Chemical Pharmacology, National Heart Institute, 1958-59; Research Associate, American Dental Assn. 1959-61, Pharmacologist, Laboratory of Biochemistry 1961-66, Chief, Connective Tissue Section, Laboratory of Biochemistry 1967-74, Acting Chief, Laboratory of Biochemistry 1972-73, Acting Chief, Laboratory of Developmental Biology and Anomalies 1974, NIDR, NIH; Weizman Institute of Science 1966-67.

Member: Biophysical Society; American Society of Biological Chemists; Phi Beta Kappa; Sigma Xi.

FRANZ M. MATSCHINSKY, M.D. -- Professor of Pharmacology, Department of Pharmacology, University of Washington School of Medicine since 1973.

M.D, Ludwig-Maximillian-Universitat 1958; Practical Medical Training, Marien Hospital 1962-63; Post doctoral Fellow, Institute for Clinical Biochemistry of the II, Medical Clinic, University of Munchen 1959-62; Postdoctoral Fellow, Department of Pharmacology, Washington University School of Medicine 1963-65.

Assistant Professor of Pharmacology 1965-68, Associate Professor of Pharmacology 1968-73, Department of Pharmacology, Washington University School of Medicine.

Member: American Histochemical Society; American Diabetes Assn.; American Assn. for the Advancement of Science; American Society of Biological Chemists; Associate Editor, Diabetes 1972-.

GARDNER CRADDOCK MCMILLAN, M.D., Ph.D. -- Associate Director for Etiology of Arteriosclerosis and Hypertension, Division of Heart and Vascular Diseases, National Heart and Lung Institute, USPHS since 1972.

B.Sc. 194D, M.D. 1944, M.Sc. 1946, Ph.D. 1948, McGill University; Internship, Department of Pathology, Royal Victoria Hospital 1944-45; Teaching Fellow, Pathological Institute, McGill University 1945-46; Graduate Research Fellow, Pathology Institute, McGill University 1946-48; Graduate Medical Research Traveling Fellow, Department of Pathology, University of Zurich; National Research Council of Canada; Surgeons of Canada 1964.

Assistant Professor, Institute of Biophysics, McGill University 1949; Assistant Professor 1949-51, Associate Professor of Comparative Pathology 1951-57, Strathcona Professor of Pathology and Chairman of the Department of Pathology 1957-66, Pathological Institute, McGill University.

Professor of Pathology, Banting Institute, University of Toronto 1966-68; Visiting Scientist and Special Assistant to the Director, National Heart Institute, USPHS 1968-69; Visiting Scientist and Chief, Arteriosclerotic Diseases Branch, Extramural Research and Training, NHLI, USPHS 1969-72.

Member: American Society for the Study of Arteriosclerosis; Canadian Assn. of Pathologists; American Assn. of Pathologists and Bacteriologists; International Academy of Pathology; Society for Experimental Pathology; American Assn. for the Advancement of Science; New York Academy of Sciences; Editorial Board: Experimental Molecular Pathology.

CURTIS LYNEA MEINERT, Ph.D. -- Professor and Head, Section of Biometry, Department of Social and Preventive Medicine, University of Maryland since 1975.

B.A. 1956, M.S. 1959, Ph.D. 1964, University of Minnesota.

Research Associate, University of Minnesota, School of Public Health, Division of Epidemiology and Biostatistics 1960-62; Research Associate 1962-65, Assistant Professor 1965-67, Associate Professor 1967-72, Institute of International Medicine, Division of Epidemiology and Biostatistics, University of

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Maryland; Professor and Deputy Director, Department of Social and Preventive Medicine, Division of Clinical Investigation, University of Maryland 1972-75.

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BOYD ERNEST METZGER, M.D. -- Associate Professor of Medicine, Center for Endocrinology, Metabolism and Nutrition, Northwestern University School of Medicine since 1971.

Pre-med, University of South Dakota 1955; M.D., State University of Iowa 1959; Internship 1959-60, Residency, Metabolism Endocrinology 1960-63, Michael Reese Hospital and Medical Center; Postdoctoral Research Fellow, Department of Biological Chemistry, Washington University School of Medicine 1965-67; American Board of Internal Medicine.

Assistant in Medicine, Chicago Medical School 1963; Surgeon, USPHS, United States Penitentiary Hospital 1963-65; Instructor 1967-68, Assistant Professor 1968-71, Department of Medicine, Northwestern University School of Medicine.

Member: American Federation for Clinical Research; American Diabetes Assn.; Endocrine Society; American Thyroid Assn.; Central Clinical Research Club; Central Society for Clinical Research; Fellow, American Cancer Society; Phi Eta Sigma 1953; Alpha Omega Alpha 1958; Sigma Xi 1966.

ALFRED F. MICHAEL, JR, M.D. -- Professor, Department of Pediatrics, University of Minnesota Medical School since 1968.

B.S. 1949, M.D. 1953, Temple University School of Medicine; Internship, Philadelphia General Hospital 1953-54; Residency, St. Christopher's Hospital for Children, Temple University School of Medicine 1954, Children's Hospital and Department of Pediatrics, University of Cincinnati College of Medicine 1954-60; USPHS Post-Doctoral Fellow, Department of Pediatrics and Biochemistry, University of Minnesota Medical School; American Board of Pediatrics 1960; Subboard of Pediatric Nephrology 1973.

Established Investigator, American Heart Assn. 1963-68, Associate Professor 1965-68, Department of Pediatrics, University of Minnesota Medical School.

Member: American Assn. of Immunologists; American Assn. for the Advancement of Science; American Society for Clinical Investigation; Society for Pediatric Research; American Society for Experimental Pathology; Central Society for Clinical Research; American Society of Nephrology; Society for Experimental Biology and Medicine; American Federation for Clinical Research Society of Pediatric Nephrology; Scientific Review Committee of National Kidney Foundation 1970-74; Council of American Society of Pediatric Nephrology.

LEONA V. MILLER, M.D. -- Associate Professor or Medicine, University of Southern California School of Medicine since 1969; Chief, Diabetes Section, Los Angeles County General Hospital since 1969.

B.S., Columbia University 1956; M.D., University of Southern California 1960; Internship 1960-61, Residency 1961-64, Los Angeles County General Hospital; Fellow, Delta Theta Tau 1959; Fellow, USPHS, 1962-65; Fellow, Columbia University 1957; Fellow, University of Southern California 1958; Fellow, California Institute of Technology 1959.

Instructor in Medicine 1964-67, Assistant Professor of Medicine 1967-69, University of Southern California; Consultant, TRW Systems, Inc., University of Alberta Health Services Centre 1971- .

Member: American Diabetes Assn., Board of Directors 1974; Diabetes Assn. of Southern California, Board of Directors 1970- ; Alpha Omega Alpha 1959.

STANLEY MIRSKY, M.D. -- Assistant Clinical Professor of Metabolic Diseases since 1970.

B.S., University of Michigan 1951; M.D., Northwestern University Medical School 1955; Internship, St. Luke's Hospital 1955-56; Residency, New England Deaconess Hospital 1956-57; Mount Sinai Hospital 1958-59; Fellow, Joslin Clinic 1957-58; Internal Medicine 1965, recertified 1974.

Chief, Diabetes Department, Elmhurst General Hospital 1964-69; Interviewer, Northwestern University Medical School.

Member: American Diabetes Assn.

HOWARD EDWIN MORGAN, M.D. -- Chairman and Professor, Department of Physiology, Milton S. Hershey Medical Center since 1967, Associate Dean for Research, Milton S. Hershey Medical Center since 1973, Pennsylvania State University.

M.D., Johns Hopkins University 1949; Internship 1949-51, Residency 1951-53, Vanderbilt University; Fellow, Medical REsearch, Howard Hughes Foundation, Vanderbilt University 1954-55.

Investigator, Howard Hughes Medical Center 1955-67, Assistant Professor, Department of Physiology 1959-62, Associate Professor, Department of Physiology 1962-66, Professor of Physiology 1966-67, Vanderbilt University.

Member American Society of Biological Chemists; American Physiological Society; Biophysical Society; Biochemical Society; Cardiac Muscle Society; International Study Group for Research in Cardiac Metabolism; Perinatal Research Society; Red Cell Club; Editorial Board: American Journal of Physiology, Circulation Research Journal of Biological Chemistry; Editor, Physiological Reviews.

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B.S., University of California 1931; M.P.H., Yale University 1934; Ph.D., Yale University 1937.

Biostatistician, Vital Statistics Division, Bureau of the Census, U.S. Department of Commerce 1940-46; Chief, Mortality Analysis, National Office of Vital Statistics, Public Health Service, U.S. DHEW 1946-61; Consultant, Planning Conference for Regional Development of Epidemiological Studies, Pan American Health Organization 1961; Director, Office of Health Statistics Analysis, National Center for Health Statistics, Health Services and Mental Administration, U.S. Department of Health, Education, and Welfare 1961-74; Project Officer, Longitudinal Study of Survival and Outcome of a Birth Cohort, Safdarjung Hospital, New Delhi, India 1969-73; Project Officer, Development of Cause of Death Data, Stampar School of Public Health, Zagreb, 1973-75; Project Officer, Longitudinal Studies in Human Reproduction, Christian Medical College, Vellore, India 1973-75.

Member: Chairman 1952, and Director, Population Assn. of America 1956-58; National Academy of Sciences 1965-70; Delta Omega; Sigma Xi; Editorial Consultant: Demography, Population Assn. of America 1966- .

ANTHONY D.MORRISON, M.D. -- Assistant Professor of Medicine, Department of Medicine, Hospital of the University of Pennsylvania since 1971.

B.A.Sc., University of British Columbia 1959; M.D., McGill University 1963; Internship, Hartford Hospital 1963-64; Residency, University of Pennsylvania 1966-68; American Board of Internal Medicine 1971.

Member: American Diabetes Assn.; American Federation for Clinical Research.

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Assistant Professor of Surgery, Director of Surgical Research Laboratories, Chief, Transplantation Service 1963-66, Professor and Vice Chairman 1966-67, Department of Surgery, University of California School of Medicine.

Member: American Assn. for the Advancement of Science; American Assn. for Laboratory Animal Science;

Fellow, American College of Surgeons; American Society for Experimental Pathology; American Society of Nephrology; American Society of Transplant Surgeons; American Surgical Assn.; Assn. for Academic Surgery, President 1969; International Society of Nephrology; International Society of Surgery; Society for Experimental Biology and Medicine; Society of Clinical Surgery; Transplantation Society; Sigma Xi; Alpha Omega Alpha; Editorial Board, Journal of Surgical Research 196B-, Journal of Surgical Oncology 196B-, American Journal of Surgery 1967-, Transplantation 1970-, Annals of Surgery 1972-, Transplantation Proceedings 1970-, Surgical Techniques Illustrated 1973; Associate Editor, Surgery 1971-.

WILLIAM D. NELLIGAN, B.S. -- Executive Oirector, American College of Cardiology since 1965.

B.S., Allen White School of Journalism, University of Kansas 1949.

Manager, University of Kansas, Southwest Kansas Extension Center 1951-55; Executive Oirector, Department of Postgraduate Medical Education, University of Kansas School of Medicine 1955-64; Assistant to the President, Medical College of Georgia 1964-65.

Member: American Society of Assn. Executives; Professional Convention Management Assn., President 1974; American Medical Writers Assn.

WILLIAM T. NORTON, Ph.D. -- Professor of Neurology, Albert Einstein College of Medicine since 1971.

A.B., Bowdoin College 1950; M.A., Priceton University 1952; Ph.D., Princeton University 1954; Senior Postdoctoral Fellow, USPHS 1967-68; Senior Postdoctoral Fellow, Albert Einstein College of Medicine 1957-60; OuPont Company Fellow, Princeton University 1952-53.

Research Chemists, E.I. duPont de Nemours and Co. 1953-57; Instructor in Biochemistry in Medicine 1957-59, Assistant Professor of Biochemistry in Neurology 1959-64, Assistant Professor of Biochemistry 1964-69, Associate Professor of Neurology 1964-71, Associate Professor of Biochemistry 1969-71, Albert Einstein College of Medicine.

Member: American Society of Biological Chemists; International Society for Neurochemistry; American Society for Neurochemistry; American Chemical Society; American Assn. for the Advancement of Science; New York Academy of Sciences; Society for Neuroscience; Sigma Xi; Editorial Board, Brain Research 1973-; Advisory Editor Journal of Neurochemistry 1972-; Associate Editor, Journal of Lipid Research 1969-72.

ABNER LOUIS NOTKINS, M.O. -- Chief, Laboratory of Oral Medicine, National Institute of Oental Research since 1973.

B.A., Yale 1953; M.O., New York University 195B; Internship 1959, Residency, Internal Medicine 1960, Johns Hopkins Hospital 1959.

Research Associate, National Cancer Institute, NIH, 1960-61; Investigator, Laboratory Microbiology and Immunology, National Institute of Oental Research, NIH 1961-67; Commanding Assistant Surgeon USPHS 1960; Medical Director USPHS 1969; Chief of virology section, Laboratory Microbiology and Immunology 1967-73; Research Instructor 1972-76.

Member: Assn. Immunologists; Infectious Oisease Society; American Society for Microbiology, American Society of Experimental Pathology; American Assn. for the Advancement of Science; Editorial Board: Infection and Immunity 1970-73.

WILLIAM O. NOVELLI, M.A. -- President, Porter, Novelli, and Associates, Inc. since 1972.

B.A., University of Pennsylvania 1963; M.A. University of Pennsylvania 1964; Candidate for Ph.D., New York University.

Marketing Manager, Lever Brothers Company 1964-70; Account Supervisor, Wells, Rich, Green, of New York 1970-71; Oirector of Advertizing and Creative Services, Peace Corps and Action 1971-72; Senior Vice President, November Group 1972.

WILLIAM R.T. OAKES, M.S., M.B.A. -- Director of Washington Operations and Vice President, Kappa Systems since 1974.

B.A.E., Georgia Institute of Technology 1959; M.S., Massachusetts Institute of Technology 1961; M.B.A., Harvard Graduate School of Business Administration 1963.

Consultant to Various Government Agencies in Program Planning, Evaluation and Systems Analysis 1963-6B; Director, Evaluation of Health Programs in Job Corps and Department of Labor 196B-70; Director, Training and Assistance Project for OEO Emergency Food and Medical Services Grantees 1969-71; Project Manager, National High Blood Pressure Education Program, National Heart and Lung Institute 1972-74.

Member: American Institute of Aeronautics and Astronautics; American Assn. of Cost Engineers; Tau Beta Pi; Sigma Gamma Tau.

HENRY ERNEST OPPENHEIMER, M.O. -- Associate Professor of Clinical Medicine, St. Louis University since 1961.

B.S. 1935, M.D., School of Medicine 1937, M.S. 1941, St. Louis University; Internship 1937-3B, Residency, Internal Medicine 193B-41, St. Mary's Group of Hospitals; American Board of Internal Medicine 1947.

Instructor in Internal Medicine 1941-44, Senior Instructor in Internal Medicine 1944-52, Assistant Professor of Clinical Medicine 1952-61, St. Louis University; Physician, Jewish Hospital of St. Louis 1950-5B; Physician, Active Staff, St. Louis University Hospitals 1941-1974; Physician, Active Staff, St. John's Mercy Hospital 1967-70; Physician, St. Louis City Hospital 1941- .

Member: American Diabetes Assn.; St. Louis Clinical Diabetes Society, President 1952-54; St. Louis Diabetes Assn., Inc., President 1965-6B; Missouri State Oiabetes Assn., President 1966-71; American Heart Assn.; St. Louis Society of Internal Medicine, President 1972-73; Editorial Board: Forecast 1965- .

JOHN BRENOAN O'SULLIVAN, M.O. -- Medical Director, Oiabetes and Arthritis Foundation; Physician, Prenatal and Metabolism Clinic, Boston City Hospital.

M.O. Royal College of Physicians and Surgeons 1951; Internship and Residencies at Jervis St. Hospital; Fellow in Internal Medicine, Lahey Clinic 1955-56; American Board of Internal Medicine; Royal College of Physicians in Ireland.

Physician, Walter E. Fernald State School 1956-57; Internist, Prenatal Metabolism Clinic 1957-61, Medical Director Prenatal Metabolism Clinic 1961-69, Boston City Hospitals; Chief, Diabetes and Arthritis Field Research Unit, Boston, USPHS 1960-72; Research Associate, Epidemiology and Preventive Medicine, Boston University 1975.

Member: International Epidemiological Assn.; New England Diabetes Assn, President 196B-69; American Diabetes Assn.

OAVID H. PAROOE, B.S., M. Oiv. -- Consultant, Full Time with Medical Service Consultants, Inc. since 1975.

B.S., Loyola College 1961; M.Oiv., Virginia Theological Seminary 1964.

Staff Chaplain, Johns Hopkins Hospital 1964-65; Member of Renal Committee, Maryland Regional Medical Program 1969-71; Minister of Parochial Services Emmanuel Episcopal Church 1965-70; Rector, Trinity Episcopal Church 1970-74; Chairman, Task Force for Organ Transplantation, Kidney Foundation of Maryland 1971.

Member: Kidney Foundation of Maryland: Planned Parenthood Assn. of Maryland.

CHARLES RAWLINSON PARK, M.O. -- Professor and Chairman, Oepartment of Physiology, Vanderbilt University School of Medicine since 1952.

A.B., Harvard College 1937; M.D., Johns Hopkins Medical School 1941; Internship, Johns Hopkins Hospital 1941-42; Residency, Peter Bent Brigham Hospital 1942-44; USPHS Fellow, Oepartment of Biochemistry, Washington University 1947-49; Welch Fellow in Internal Medicine, Department of Biochemistry, Washington University 1949-52.

Assistant Professor of Medicine, Washington University 1952.

Member: American Physiological Society; American Society of Biological Chemists; American Society

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of Clinical Investigation; Assn. of American Physicians; Phi Beta Kappa; Alpha Omega Alpha; Sigma Xi; Editorial Board, Journal of Biological Chemistry 1963-68.

ARNALL PATZ, M.D. -- Professor of Ophthalmology, Johns Hopkins Medical School; Ophthalmologist, Johns Hopkins Hospital since 1955.

B.S., Emory University, 1942; M.D., Emory University School of Medicine 1945; Internship, Sinai Hospital Baltimore 1945-46; Residency, Walter Reed Hospital 1947-48, D.C. General Hospital 1948-50; Fellow, Ophthalmic Pathology, Armed Forces Institute of Pathology 1950-51; American Board of Ophthalmology 1950.

Instructor in Ophthalmology, Georgetown University 1952-55; Instructor, Assistant Professor, Associate Professor, Professor 1955- present of Ophthalmology Johns Hopkins Medical School; Attending Ophthalmologist, Baltimore Ear and Eye Hospital 1951-70, Sinai Hospital 1951-70, Greater Baltimore Medical Center 1951-70.

Member:American Ophthalmological Society; Assn. for Research in Vision and Ophthalmology; American Academy of Ophthalmology and Otolaryngology; Pan-American Assn. of Ophthalmology; International Society for Prevention of Blindness; National Society for Prevention of Blindness, Board of Directors; Editorial Board, American Journal of Ophthalmology; Section Editor, Survey of Ophthalmology.

LINDA E. PERLE, J.D. -- Attorney in private practice, Washington, D.C. since 1975.

B.A., University of Pennsylvania 1969; J.D., Harvard Law School, 1972.

Attorney/Research Specialist, Task Force on School Finance, U.S. Office of Education 1972-73; Staff Attorney/Project Director, Lawyers' Committee for Civil Rights Under Law 1973-75.

Member: Washington Council of Lawyers; District of Columbia Bar Association; Massachusetts Bar Association; American Bar Association; Advisory Committee to the Model Education Legislation Project of the Lawyers' Committee for Civil Rights Under Law.

SEYMOUR M. PERRY, M.D. -- Special Assistant to the Director, NIH since 1974.

B.A., University of California 1943; M.D., University of Southern California 1947; Internship 1946-48, Residency 1948-51, Los Angeles County Hospital; Fellow in Hematology, UCLA Medical Center 1954-55; American Board of Internal Medicine 1955.

SA Surgeon, USPHS, Phoenix Indian General Hospital 1952; SA Surgeon of Internal Medicine, USPHS Outpatient Clinic, Washington, D.C. 1952-54; Assistant Recearch Physician 1955-57, Assistant Professor of Medicine 1956-60, Head, Hematology Training Program 1957-60, Assistant Clinical Professor of Medicine 1960-61, UCLA Medical Center; Attending Specialist, Wadsworth VA Hospital 1958-61; Senior Investigator, Medicine Branch 1961-65, Chief Medicine Branch, Clinical Trials, Chemotherapy 1965-68, Associate Scientific Director, Clinical Trials, Chemotherapy 1966-71, Chief, Human Tumor Cell Biology Branch, Clinical Trials, Chemotherapy 1968-71, Associate Director for Program Planning, Division of Cancer Treatment 1971-74, Deputy Director, Division of Cancer Treatment 1973-74, Acting Director, Division of Cancer Treatment 1974, National Cancer Institute.

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Chemist since 1952, NIDR, Chief, Protein Chemistry Section, Laboratory of Biochemistry 1961-66, Chief, Laboratory of Biochemistry 1966-72, NIDR; Visiting Scientist, Laboratory of Molecular Biophysics, Department of Zoology, Oxford 1972-73.

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DAVID PLEASURE, M.D. -- Director, Research in Pediatric Neurology, Children's Hospital of Philadelphia since 1974; Associate Professor, Orthopaedic Surgery 1973- , Associate Professor, Pediatrics 1973-, Associate Professor, Neurology 1972- , University of Pennsylvania.

B.A., Yale University 1959; M.D., College of Physicians and Surgeons, Columbia University 1963; Internship, University of Vermont, Mary Fletcher Hospital 1963-64; Residency, Neurological Institute 1964-68; National Institute of Neurological Diseases and Stroke; Neurology Boards 1970.

Assistant Neurologist, NINDS, NIH 1968-69; Associate in Neurology 1969-70, Assistant Professor in Neurology 1970-72, University of Pennsylvania; Chief, Neurology, Philadelphia General Hospital 1973-74.

Member: American Academy of Neurology; American Neurological Assn.; Society for Neuroscience; Alpha Omega Alpha; Phi Beta Kappa.

DANIEL PORTE, JR., M.D. -- Associate Chief of Staff for Research, VA Hospital, Seattle since 1971; Professor of Medicine, University of Washington School of Medicine since 1973.

A.B., Brown University 1953; M.D., University of Chicago Medical School 1957; Internship, San Francisco Hospital 1957-58; Residency, VA Hospital, San Francisco 1961-72; Residency, University of California Medical Center 1962-63; Fellow, USPHS Cardiovascular Research Institute, UCMC 1958-59; Fellow, American Heart Assn., Division of Endocrinology, University of Washington School of Medicine 1963-65; American Board of Internal Medicine 1964; National Board of Medical Examiners 1958.

Research Associate, Department of Medicine, University of Chicago Medical School 1954-57; Clinical Investigator 1965-68, Chief, Endocrinology Section 1968-71, VA Hospital, Seattle; Assistant Professor of Medicine 1965-68, Associate Professor of Medicine 1969-73, University of Washington School of Medicine.

Member: American Assn. for the Advancement of Science; Fellow, American College of Physicians 1968; American Federation for Clinical Research; American Diabetes Assn.; Society for Experimental Biology and Medicine; American Society for Clinical Investigation; Endocrine Society; Assn. of American Physicians; Editorial Board, Journal of Clinical Investigation 1973.

JOHN H. PORTER, B.S. -- Founder, Porter, Novelli, and Associates, Inc. since 1972.

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Assistant Account Executive, Benton & Bowles, Inc. 1955, 1957-59; Vice President, Account Supervisor 1959-66, Vice President, Management Supervisor 1966-69, Senior Vice President 1969-70, Ogilvy & Mather, Inc.; Director of Public Affairs, Peace Corps and Action 1970-72; Program Development for Discover America Travel Organization; Public Information Program Development for HUD; Program for World Wildlife Fund.

BARBARA M. PRATER, R.D., M.S. -- Associate Professor, Medical Dietetics, Utah State University.

B.S., M.S., University of Utah; Internship, Highland Alameda Company.

Administrative Dietitian, Latter-Day Saints Hospital; Teaching Dietitian, Utah Technical College; Assistant Professor, University of Utah; Nutrition Education, Diabetes Center.

Member: Utah Dietetic Assn., President 1974-87; American Diabetes Assn.

Member: American Cancer Society, Advisory Committee on Chemotherapy and Hematology; National Blood Club, President 1971; American Society of Hematology, Chairman, Scientific Affairs Committee 1971; USPHS, Medical Director 1961- ; Fellow, American College of Physicians 1969; American Federation for Clinical Research; International Society of Hematology; American Assn. for Cancer Research; American Society of Clinical Oncology.

THADDEUS EDMUND PROUT, M.D. -- Physician, Johns Hopkins Hospital since 1958; Associate Professor of Medicine, Johns Hopkins University School of Medicine since 1964.

M.D., Harvard Medical School 1948; Internship 1948-49, Residency 1949-50, Harvard Medical Service, Boston City Hospital; Boston VA Hospital 1952-54;

Fellow in Medicine, Johns Hopkins University School of Medicine 1955-58; American Board of Internal Medicine 1956.

Assistant Professor of Medicine 1958-64, Director, Post Graduate Training in Diabetes 1958-65, Johns Hopkins University School of Medicine; Director, Metabolic Division, Moore Clinic 1958-, Associate Physician, Diabetes/Endocrine Clinic 1958-65, Johns Hopkins Hospital; Chief of Medicine, Greater Baltimore Medical Center 1964-.

Member: American Assn. for the Advancement of Science; Endocrine Society; American Federation of Clinical Research; American Diabetes Assn., Director 1968-74; Fellow, American College of Physicians; American Thyroid Assn.; Boylston Medical Society 1948; Alpha Dmega Alpha 1958.

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B.S.N., Vanderbilt University 1971; M.S.N., University of Michigan 1974; Ph.D., University of Michigan 1975; Fellow, National Institute of Mental Health 1972-74.

Research Assistant-Director Diabetic Education, Vanderbilt University 1966-71; Staff Nurse, Bartholomew Hospital 1971-72; In-Service Instructor/Supervisor, Methodist Hospital 1972; Head Nurse, Adolescent Psychiatry, University of Michigan 1973; Psychotherapist-Clinical Specialists, Mental Health Consultant, Washtenaw County Community Mental Health 1973-75; Consultation with National Health Organization of Sweden, summer 1974.

Member: American Diabetes Assn.; American Nurses Assn.; Michigan Diabetes Assn., Board of Directors; Sigma Theta Tau.

D.A. PYKE, M.D. -- Physician in Charge, Diabetic Department, King's College Hospital since 1971.

Cambridge University and University College Hospital Medical School 1945; M.D., Cambridge University College Hospital Medical School 1956; Fellow, Royal College of Physicians 1964.

Staff, King's College Hospital since 1959.

Member: Assn. of Physicians of Great Britian and Ireland.

MARVIN L. RALLISON, M.D. -- Coordinator, State of Utah, American Diabetes Assn. since 1972; Associate Professor of Pediatrics, University of Utah since 1974.

B.S., Utah State University 1954; M.D., University of Utah 1957; Internship, Minneapolis General Hospital 1957-58; Residency, University of Minnesota Hospitals 1958-6D; Wyeth Pediatric Residency Fellow 1958-60; Fellow in Endocrinology and Metabolism, University of Utah 1963-65; American Board of Pediatrics 1964.

Instructor in Pediatrics, University of Minnesota 196D-61; Clinical Assistant in Pediatrics 1961-63, Instructor in Pediatrics 1965-67, Assistant Professor of Pediatrics 1967-74, University of Utah; Center Director, Cystic Fibrosis Care, Teaching, and Research Center, Salt Lake City 1965-71; Director, Utah-Arizona Thyroid Epidemiology Study, USPHS 1966-72; Education Director, Diabetes Center 1971-74.

Member: American Diabetes Assn.; American Thyroid Assn.; American Society of Pediatric Endocrinologists; Phi Kappa Phi; Alpha Episilon Delta.

LILLIAN RECANT, M.D. -- Professor of Medicine, Georgetown University School of Medicine since 1966; Chief, Diabetes Research Laboratory since 1966 and Medical Investigator since 1971 at VA Hospital, Washington, D.C.

B.A., Hunter College 1941; M.D., Columbia College of Physicians and Surgeons 1946; Residency, Columbia Presbyterian Medical Center, Department of Medicine 1948-49; Commonwealth Fellow in Endocrinology, Harvard Medical School 1947-48; Commonwealth Fellow in Enzymology and Medicine, Columbia College of Physicians and Surgeons 1949-50; Commonwealth Fellow in Biochemistry, Washington University School of Medicine 1950-51; Special U.S. Public Health Fellow in Biochemistry, Washington University School of Medicine 1951-52; American Board of Clinical Nutrition 1968.

Assistant Professor of Medicine and Preventive Medicine 1952-58, Associate Professor of Medicine and Preventive Medicine 1958-66, Washington University School of Medicine; Visiting Professor of Medicine, Royal Free Hospital, London 1961.

Member: Endocrine Society; American Diabetes Assn.; St. Louis Diabetes Assn.; Society for Experimental Biology and Medicine, Nutrition Division; Royal Society of Medicine; Phi Beta Kappa, Phi Sigma; Sigma Xi; Alpha Omega Alpha.

TIMOTHY J. REGAN, M.D. -- Director, Division of Cardiovascular Disease, Department of Medicine since 1965, Professor of Medicine since 1966, College of Medicine and Dentistry of New Jersey.

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Junior Associate in Medicine, City of Detroit Receiving Hospital 1957-6D; Associate in Medicine, Children's Hospital, Detroit 1959-60; Instructor in Medicine 1957-59, Assistant Professor of Medicine 1959-6D, Wayne State University School of Medicine; Associate Director 196D-65, Director 1965-71, T.J. White Cardiopulmonary Institute, B.S. Pollak Hospital; Attending Physician, B.S. Pollak Hospital 196D-71; Assistant Professor of Medicine, Seton Hall University School of Medicine 196D-62; Associate Professor of Medicine, College of Medicine and Dentistry of New Jersey 1962-66.

Member: American Federation for Clinical Research; American Physiological Society; American Heart Assn.; American Society for Clinical Investigation; American Diabetes Assn.; International Study Group for Research in Cardiac Metabolism; Fellow, American College of Cardiology; Editorial Board: Journal of Clinical Investigation 197D-75.

SEYMOUR RFICHLIN, M.D., Ph.D. -- Professor of Medicine, Tufts University School of Medicine since 1972; Senior Physician and Chief, Endocrine Division, New England Medical Center Hospital since 1972.

A.B., Antioch College 1945; M.D., Washington University School of Medicine 1948; Ph.D., University of London 1954; Internship, New York Hospital 1948-49; Residency, Barnes Hospital 1949-5D, New York Hospital 195D-51, Barnes Hospital 1951-52; Research Fellow in Neuroendocrinology, Institute of Psychiatry, London Postgraduate Medical Institute, University of London 1952-54; Research Fellowship, Washington University School of Medicine 1954-56; National Board of Medical Examiners 1948; American Board of Internal Medicine 1958.

Instructor in Medicine 1954-56, Assistant Professor of Medicine and Psychiatry 1956-59, Assistant Professor of Medicine, Psychiatry and Preventive Medicine, Chief, Division of Psychosomatic Medicine, Departmentof Medicine 1959-62, Chief, Medical Housestaff Clinic 1959-62, Washington University School of Medicine.

Assistant Physician, Barnes and Renard Hospitals 1956-62; Associate Professor of Medicine 1962-66, Professor of Medicine 1966-69, University of Rochester School of Medicine and Dentistry, Chief, Endocrine Unit; Senior Associate Physician 1962-66, Physician 1966-69, Strong Memorial Hospital; Professor of Medicine and Chairman, Department of Medical Pediatric Specialties 1969-71, Professor and Head, Department of Physiology 1971-72, University of Connecticut School of Medicine.

Member: Society for Endocrinology; American Federation for Clinical Research; Endocrine Society; American Psychosomatic Society; American Physiological Society; Central Society for Clinical Research; American Society for Clinical Investigation; Society for Experimental Biology and Medicine; International Brain Research Drganization; Assn. of American Physicians; Alpha Omega Alpha 1947; Sigma Xi 1955.

ALBERT E. RENOLD, M.D. -- Professeur Ordinaire ad personam, Faculty of Medicine, University of Geneva, and Chief, Division of Clinical Biochemistry and Experimental Diabetes, Department of Medicine, Director, Institut de Biochemie Clinique since 1963.

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Certificat de Maturité, Gymnase classique, Lausanne 1941; M.D., University of Zurich 1947; Research Fellow, New England Deaconess Hospital 1948-49; Medical House Officer, Peter Bent Brigham Hospital 1949-50; Research Fellow in Medicine 1950-51, Research Fellow in Biological Chemistry 1951-53, Harvard Medical School; Residency, Peter Bent Brigham Hospital 1953-54.

Instructor in Medicine 1954-56, Associate in Medicine 1956-59, Director, Carbohydrate Research Laboratory, Department of Medicine 1956-59, Assistant Professor of Medicine 1959-62, Director, Baker Clinic Research Laboratory, Department of Medicine 1959-62, Harvard Medical School; Junior Associate in Medicine 1954-56, Associate in Medicine 1956-59, Senior Associate in Medicine 1959-62, Peter Bent Brigham Hospital; Associate Dean, Faculty of Medicine, University of Geneva 1969-72.

Member: American Diabetes Assn.; American Assn. for the Advancement of Science; American Physiological Society; American Society for Clinical Investigation; Endocrine Society; Society for Experimental Biology and Medicine; Boylston Society, President 1961-62; European Assn. for the Study of Diabetes, President 1974- ; European Society for Clinical Investigation, President 1967-68; Swiss Biochemical Society, President 1968-71; Swiss Society for Clinical Chemistry; Swiss Society of Cellular and Molecular Biology; Swiss Society for Nutrition Research; Editorial Board: Experimental 1959-69; Diabetologia 1965-70; European Journal of Clinical Investigation 1969-75; Hormone and Metabolic Research 1968- .

HAROLD RIFKIN, M.D. -- Clinical Professor of Medicine, Albert Einstein College of Medicine since 1962.

A.B., University of Missouri 1935; M.D., Dalhouise University School of Medicine 1940; Internship, Jewish Hospital of Brooklyn 1940-42; Residency 1942-47, Fellow, Division of Medicine 1946-47, Montefiore Hospital; American Board of Internal Medicine 1948.

Associate Professor of Microbiology, New York Medical College 1947-55; Associate Clinical Professor of Medicine, Albert Einstein College of Medicine 1954-62; Acting Chief of Medicine 1967-68, Chief, Diabetes Services, Department of Medicine 1957-59, Montefiore Hospital and Medical Center.

Member: American Federation of Clinical Research; New York Academy of Medicine; Fellow, American College of Physicians; New York Academy of Sciences; American Diabetes Assn.; New York Diabetes Assn., President; Editorial Board: Psychomatic Medicine 1972- .

DAVID LAWRENCE RIMOIN, M.D., Ph.D. -- Chief, Division of Medical Genetics, and Associate Director, Clinical Research Center, Harbor General Hospital since 1970; Professor of Pediatrics and Medicine, UCLA School of Medicine since 1973.

B.Sc. 1957, M.D., C.M., 1961, M.Sc. 1961, McGill University; Ph.D., Johns Hopkins University School of Medicine 1967; Internship 1961-62, Residency 1962-63, Royal Victoria Hospital; Residency, Johns Hopkins Hospital 1963-64; Fellow in Medicine, Johns Hopkins University School of Medicine 1964-67; National Board of Medical Examiners 1962; American Board of Internal Medicine 1968; Licentiate of the Medical Council of Canada 1962.

Assistant Physician, Barnes and Allied Hospitals 1967-70; Director, Medical Genetics Clinic 1967-70; Assistant Professor of Medicine and Pediatrics 1967-70, Washington University School of Medicine; Associate Professor of Pediatrics and Medicine, UCLA School of Medicine 1970-73.

Member: American Assn. for the Advancement of Science; Fellow, American College of Physicians; American Diabetes Assn.; American Federation for Clinical Research; American Society for Clinical Investigation; American Society of Human Genetics; Endocrine Society; Society for Pediatric Research; Alpha Omega Alpha; Sigma Xi; Associate Editor: Metabolism 1970; American Journal of Human Genetics 1974.

ROBERT LLOYD RINGLER, Ph.D. -- Deputy Director, National Heart and Lung Institute, NIH since 1969.

A.B., Central Michigan College 1951; Ph.D., Michigan State University 1955.

Assistant Professor, Department of Biochemistry, North Carolina State College 1955-57; Senior Associate, Enzyme Division, Edsel B. Ford Institute for Medical Research, Henry Ford Hospital 1957-61; Scientist Administrator 1961-62; Chief Program Projects Branch 1962-66; Head, Tusk Force on Cardiovascular Research Centers 1966-67; Acting Chief, Program Project Branch 1967-68; Chief, Institutional Research Programs 1967-68; Special Assistant to the Director 1968-69; Acting Associate Director for Collaborative Research and Development 1969-70; Acting Director, Division Blood Diseases and Resources 1972-73; Acting Director 1974-75.

Member: American Society of Biological Chemists; American Heart Assn.; Fellow, American College of Cardiology; Sigma Xi.

SAUL ROSEMAN, Ph.D. -- Professor, McCollum-Pratt Institute and Department of Biology since 1965,

B.S., City College of New York 1941; M.S. 1943, Ph.D. 1948, University of Wisconsin.

Instructor 1949-51, Assistant Professor, Department of Pediatrics 1951-53, University of Chicago 1948-53; Assistant Professor of Biological Chemistry 1953-57, Associate Professor of Biological Chemistry and Chemist 1957-60, Professor and Chemist 1960-65, Department of Biological Chemistry and Rackham Arthritis Research Unit, University of Michigan.

Member: National Academy of Sciences; American Society of Microbiology; American Society of Biological Chemists; American Chemical Society; American Assn. for the Advancement of Science; American Academy of Arts and Sciences; Biophysical Society; Editorial Board: Journal of Biological Chemistry 1962-75; Journal of Lipid Research 1967- ; Journal Membrane Biology 1969- ; Biochimica Et Biophysica Acta 1974- .

RUSSELL ROSS, D.D.S., Ph.D. -- Associate Dean for Scientific Affairs since 1971, Professor of Pathology since 1969, University of Washington School of Medicine.

A.B., Cornell University 1951; D.D.S., Columbia University 1955; Ph.D., University of Washington 1962; Internship, Presbyterian Hospital 1955-56; Special Research Fellow, Pathology, University of Washington School of Medicine 1958-62; Guggenheim Fellow 1966-67; Special Research Fellow, National Institute of Dental Research NIH.

Staff Member in Charge, USPHS Hospital, Seattle 1956-58; Assistant Professor 1962-65, Associate Professor 1965-69, Departments of Pathology and Oral Biology, University of Washington, Schools of Medicine and Dentistry.

Member: American Society for Cell Biology; Histochemical Society; American Assn. for the Advancement of Science; Fellow, Royal Microscope Society; International Academy of Pathology; Electron Microscope Society for Experimental Pathology; International Society for Cell Biology; American Assn. of Pathologists and Bacteriologists; American Heart Assn.; Gerontological Society; Tissue Culture Assn.; Editorial Boards: Journal of Periodontal Research 1966-72; Journal of Investigative Dermatology 1968-72; Connective Tissue Research 1971; Journal of Cell Biology 1972-75; Experimental and Molecular Pathology 1974,

JESSE ROTH, M.D. -- Chief, Diabetes Branch, National Institute of Arthritis, Metabolism and Digestive Diseases, NIH since 1974.

B.A., Columbia University 1955; M.D., Albert Einstein College of Medicine 1959; Internship and Residency, Ward Medical Service, Barnes Hospital, Washington University School of Medicine 1959-61; Research Fellow, American Diabetes Assn. Radioisotope Service, VA Hospital, Bronx 1961-63; Clinical Associate 1963-65, Senior Investigator 1965-66, Chief of Diabetes Section 1966-74, Clinical Endocrinology Branch, NIAMDD, NIH.

Member: American Society for Clinical Investigation.

ARTHUR HAROLD RUBENSTEIN, M.D., B.Ch. -- Professor of Medicine, University of Chicago since 1974.

M.B., B.Ch., University of the Witwatersrand 1960; Internship, Professorial Medical and Surgical Units, Johannesburg General Hospital 1961; Fellow, American College of Physicians 1972; Royal College of Physicians of London 1965; Fellow, College of Physicians, Surgeons and Gynecologists of South Africa 1964; Research Fellow, USPHS, University of Chicago 1967-68.

Senior Research Bursar of the Council for Scientific and Industrial Research, Department of Medicine, University of the Witwatersrand 1962-63; Tutorial Registrar in Medicine, Professorial Unit, Johannesburg General Hospital 1963, 1966-67; Research Assistant, Endocrinology, Department of Medicine, Postgraduate Medical School, Hammersmith Hospital 1965-66; Assistant Professor of Medicine 196B-70, Associate Professor of Medicine 1970-74, University of Chicago.

Member: American Diabetes Assn.; Central Society for Clinical Research; Central Clinical Research Club; American Federation for Clinical Research; Endocrine Society; American Assn. for Foreign Medical Graduates; American Society for Clinical Investigation; American Assn. for the Advancement of Science; Alpha Omega Alpha; Editorial Board: Diabetes 1972-74; Endocrinology 1973- .

ANTONID SCARPA, M.D., Ph.D. -- Assistant Professor, Johnson Research Foundation since 1973.

M.D., University of Padua, School of Medicine 1966; Ph.D., University of Padua and Utrecht 1970; Research Fellow, Dutch Council for Pure Research, University of Utrecht 197D; N.A.T.O., Postdoctoral Fellow, University of Pennsylvania 1971-72.

Research Assistant, Center for Physiology of Mitochondria, University of Padua 1966-67; Visiting Scientist, Department of Biochemistry, University of Bristol 196B; Visiting Scientist, Weizmann Institute of Science 1969; Assistant Professor, Institute of General Pathology, University of Padua 1969-70; Visiting Assistant Professor, Johnson Research Foundation, University of Pennsylvania 1972-73; Established Investigator, American Heart Assn. since 1973.

Member: Biochemical Society; Biophysical Society; American Society of Biological Chemists; Society of General Physiologists; American Society of Physiologists.

ROBERT SCHWARTZ, M.D. -- Professor of Medical Sciences, Brown University since 1974; Director, Pediatric Metabolism and Nutrition, Rhode Island Hospital since 1974.

B.S. 1943, M.D. 1947, Yale University; Internship 1947-48, Residency 194B-49, Children's Medical Service Bellevue Hospital; Fellow in Medicine, Children's Hospital 1959-51; USPHS Postdoctoral Research Fellow, Gamble's Laboratory, Children's Hospital 1949-51; Research Fellow, Pediatrics, Harvard Medical School 1949-51; Fellow in Medicine, Thorndike Memorial Laboratory, Boston City Hospital 1951-53; National Board of Medical Examiners 1947; American Board of Pediatrics 1954.

Instructor in Pediatrics 1949, New York University; Research Associate in Medicine 1951-53, Instructor in Pediatrics 1953-54, Associate in Pediatrics 1955-5B, Harvard Medical School; Chief, Diabetic Clinic 1954-5B, Chief, Metabolism Division 1956-58, Chief, Renal-Nephrosis Clinic 1956-5B, Children's Hospital; Associate Professor of Pediatrics 1959-66, Professor of Pediatrics 1966-74, Acting Chairman, Department of Pediatrics 196B-7D, Case Western Reserve University School of Medicine; Co-Director, Perinatal Clinical Research Center 1964-66, Director, Department of Pediatrics 1967-74, Cleveland Metropolitan General Hospital.

Member: American Federation for Clinical Research; Society for Pediatric Research; New York Academy of Sciences; American Assn. for Advancement of Science; Central Society for Clinical Research; Cleveland Society for Experimental Biology and Medicine, President 1967-68; Society for Experimental Biology and Medicine; American Pediatric Society; American Academy of Pediatrics; Royal Society of Medicine; American Assn. for Maternal and Child Health; American Assn. for Child Care in Hospitals; American Society for Clinical Nutrition; American Institute of Nutrition; Perinatal Research Society; Sigma Xi 1953; Alpha Omega Alpha 1947; Editorial Board: Pediatrics 1966-72.

ADDISDN BEECHER SCOVILLE, JR., M.D. -- Instructor and Associate Clinical Professor and Professor of Clinical Medicine, Vanderbilt University since 1946.

B.A. 1936, M.D. 1939, Cornell Medical School; Internship 1939-40, Residency 194D-41, Vanderbilt University Hospital; National Research Fellow 1941-42.

Instructor in Pathology, Vanderbilt University Hospital 1942-43; Private Practice of Internal Medicine, specialising in Diabetes 1946- .

Member: Nashville Academy of Medicine, Chairman of the Board; American Diabetes Assn., President, and Board of Directors; Scoville Chair in Diabetes and Metabolic Diseases; United Health Foundation, Board of Directors; Metropolitan Nashville Health and Hospital Planning Council, President; American Heart Assn.; Fellow, American College of Physicians; Associate Editor: Journal of Tennessee Medical Assn.

LEE SECHREST, Ph.D. -- Professor, Florida State University since 1973.

B.A., Ohio State University 1952; M.A., Ohio State University 1954; Ph.D., Ohio State University 1956; Internship, Columbus Psychiatric Institute 1955-56.

Staff Psychologist, Juvenile Diagnostic Center 1955; Assistant Professor, Pennsylvania State University 1956-58; School Psychologist, Glenkirk School for Retarded Children 1959-63; Senior Specialist, East-West Center 1965-66; Assistant Professor, Northwestern University 195B-73.

Member: Fellow, American Psychological Assn.; Psychometric Society; Philippine Psychological Assn.; Society for the Study of Social Problems; Sigma Xi; Phi Beta Kappa; Editorial Board: Journal of Abnormal Psychology; Journal of Consulting Psychology.

ETHAN SIMS, M.D. -- Professor of Medicine, Department of Medicine, Metabolic Unit, University of Vermont College of Medicine since 1965.

B.S., Harvard College 1938; M.D., Columbia College of Physicians and Surgeons 1942; Internship 1942-43, Residency 1943-44, Yale-New Haven Hospital; Fellow, Yale School of Medicine 1946-47; Commonwealth Fellow, 1964-65; American Board of Internal Medicine 1951.

Instructor of Medicine, Yale-New Haven Hospital 1950; Assistant Professor, Associate Professor, Professor of Medicine, University of Vermont College of Medicine 1950- ; Attending Physician, Medical Center Hospital of Vermont 195D- .

Member: Society of Gynecologic Investigation; Federation of Clinical Research; Endocrine Society; Fellow, American College of Physicians; American Assn. for the Advancement of Science; American Diabetes Assn.; Fellow, Society for Clinical Nutrition; Editorial Board: Metabolism 1970- .

MARVIN D. SIPERSTEIN, M.D., Ph.D. -- Professor of Medicine, Director, Division of Pathophysiology, Department of Medicine, University of California San Francisco Medical Center since 1973; Chief, Metabolism Section, Medical Service, San Francisco VA Hospital since 1973.

B.S. 1946, M.B. 1947, M.D. Medical School 194B, University of Minnesota; Ph.D., University of California, Berkeley 1953; Internship, University of Chicago Clinics 194B-49; Residency, Internal Medicine, Massachusetts General Hospital 1955.

Assistant Professor of Internal Medicine 1955-5B, Associate Professor of Internal Medicine 195B-64, Professor of Internal Medicine 1964-73, University of Texas Southwestern Medical School; Consultant in Internal Medicine and Research, VA Hospital 1964-73; Acting Chairman and Vice Chairman, Department of Medicine, University of California Service, Medical Service, San Francisco VA Hospital 1974-75.

Member: Assn. of American Physicians; American Society for Clinical Investigation; American Society of Biological Chemists; Biochemical Society; American Assn. for Cancer Research; American Clinical and Climatological Assn.; Central Society for Clinical Investigation; American Federation for Clinical Research; Society for Experimental Biology and Medicine; American Assn. for the Advancement of Science; American Diabetes Assn.; Dallas Diabetes Assn., President 1963-64; Southern Society for Clinical Investigation, President 197D-71; Sigma Xi; Editorial Board: Journal of Artherosclerosis Research 197D-74; Journal of Clinical Investigation 1965-69; Life Sciences 1975; Diabetes Journal 1964-69; Journal of Lipid Research 196D-6B, 1974- ; Advances in Internal Medicine 1970- .

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JAY SAMUEL SKYLER, M.D. -- Director, Diabetes and Nutrition Clinics, Department of Medicine, Duke University Medical Center since 1975; Assistant Professor of Medicine, Assistant Professor of Pediatrics, Duke University Medical Center since 1975.

B.S., Pennsylvania State University 1967; M.D., Jefferson Medical College 1969; Internship 1969-7D, Residency 1970-71, Department of Medicine, Duke University Medical Center; Fellow in Endocrinology and Metabolism 1971-73, Fellow in Medicine, Medical Training Program 1971-72, Duke University Medical Center; National Board of Medical Examiners 1970; American Board of Internal Medicine 1972; American Board of Endocrinology and Metabolism 1973.

Associate in Medicine 1972-75, Associate in Community Health Sciences 1972-75, Duke University Medical Center; Clinical Investigator, Hypertension - Endocrine Branch, National Heart and Lung Institute, NIH 1973-75; Medical Director, Physician's Associate Program, Duke University 1972-73; Assistant Clinical Professor of Medicine, George Washington University School of Medicine and Health Sciences 1974-75.

Member: American College of Physicians; American Diabetes Assn.; American Federation of Clinical Research; New York Academy of Sciences; Phi Delta Epsilon, President, Mu Chapter 1967-68; Book Reviewer: The New Physician 1972- .

MARTHA WALLER SMITH, M.S. -- Behavioral Research Associate, Bureau of Program Evaluation, Pennsylvania Department of Health since 1973.

A.B., Cornell University 1948; M.S., Shippensburg State College 1974.

Training Representative, Strawbridge and Clothier 1949-52; Research Assistant, Lancaster County School Board 1968-69; Medical Research Technician I, Division of Research and Biostatistics, Pennsylvania Department of Health 1969-73.

Member: American Personnel and Guidance Assn.; American Statistical Assn.; Phi Beta Kappa; Psi Chi.

WILBUR LEE SMITH, Dr. P.H. -- Assistant Dean and Assistant Professor, College of Health Related Professions, Wichita State University since 1973.

B.S. 1963, M.S. 1966, University of Oklahoma; IBM Computer Systems Fundamentals, Certificate 1967; Dr. P.H., University of Texas 1969.

Technician, Cardiovascular Performance Laboratory, Civil Aeromedical Research Institute, Federal Aviation Agency 1963; Manager, Cardiovascular Performance Laboratory, Research Assistant, Baylor University College of Medicine 1966-68; Research Associate, University of Texas School of Public Health 1968-69; Computer Specialist, Health Care Applications, Xerox Corporation's Scientific Data Systems 1969-7D; Principal Member Training Staff and International Marketing Support Manager for Computer Applications in the Health Care Industry, Xerox Corporation 1970-72; Project Director, Community Health Education Program, College of Health Related Professions, Wichita State University 1973-75; Acting Chairman, Respiratory Therapy Department, Wichita State University 1974-75.

Member: American Diabetes Assn., President Elect Kansas Affiliate 1974-75; Phi Sigma.

SIGMUND S. SOCRANSKY, D.D.S. -- Senior Member of the Staff, Forsyth Dental Center since 1968; Assistant Clinical Professor of Oral Microbiology, Harvard School of Dental Medicine since 1967.

D.D.S., University of Toronto 1957, Research Fellow in Bacteriology, Forsyth Dental Infirmary for Children 1957-58; Research Fellow in Dental Medicine, Harvard School of Dental Medicine and Forsyth Dental Infirmary 1958-61; Graduate Dental Research Fellow of the Canadian National Research Council 1957-61.

Associate in Dental Medicine, Departments of Bacteriology and Periodontology 1961-64, Assistant Member of the Staff and Head of Department of Periodontology 1963- , Forsyth Dental Center; Assistant Professor of Periodontology 1964- , Harvard School of Dental Medicine.

Member: American Assn. for the Advancement of Science; American Dental Assn.; American Society for Microbiology; International Assn. for Dental Research; American Academy of Periodontology; National Institute of Dental Research; Omicron Kappa Upsilon.

J. STUART SOLDNER, M.D. -- Associate Director, Joslin Research Laboratory since 1971; Associate Professor of Medicine, Peter Bent Brigham Hospital since 1974.

B.S., Tufts University 1954; M.D., Dalhousie Medical School 1959; Internship 1958-59, Residency 1960-61, Victoria General Hospital; Research Fellow in Medicine, Dalhousie Medical School and Victoria General Hospital 1959-60; Research Fellow, New England Deaconess Hospital 1961-62; Research Fellow in Medicine, Harvard Medical School, Baker Clinic Research Laboratory 1961-64; National Board of Medical Examiners 1959.

Assistant in Medicine 1961-65, Junior Associate in Medicine 1965-67, Associate in Medicine 1967-68, Director, Medical Clinic Section, Outpatient Department 1967-68, Senior Associate in Medicine 1968- , Peter Bent Brigham Hospital; Instructor in Medicine 1964-67, Associate in Medicine 1967-69, Assistant Professor of Medicine 1969-72, Associate Professor of Medicine 1972-74, Harvard Medical School; Research Associate, Joslin Research Laboratory 1964-71; Associate Staff Member, Department of Medicine, New England Deaconess Hospital 1974- .

Member: American Diabetes Assn.; American Federation for Clinical Research; New York Academy of Sciences; Endocrine Society; European Assn. for the Study of Diabetes; Society of Nuclear Medicine; American Physicological Society; Society for Experimental Biology and Medicine; American Society for Clinical Investigation; Alpha Dmega Alpha 1959; Editorial Board: Metabolism

JOSEPH NATHAN SOLOWIEJCZYK -- Senior, University of Pennsylvania.

Member: Panel Discussion Group, 3rd National Conference on Diabetes in Youth, American Diabetes Assn. June, 1975; Counselor, Elliot P. Joslin Camp 1969-75; Director, Educational Program, Elliott P. Joslin Camp, Summer 1975; Counselor, Joslin-Barton Winter Camp Program, December 1974-75.

MARK ALEXANDER SPERLING, M.D. -- Associate Professor, Pediatrics, University of California at Los Angeles School of Medicine since 1975; Chief Pediatric Endocrinology and Metabolism, Harbor General Hospital since 1975.

MBBS, University of Melbourne 1962; Residency, Prince Henry's Hospital 1963-64; Royal Children's Hospital 1964-68; Fellow, Pediatric Endocrinology and Metabolism, Children's Hospital, University of Pittsburgh School of Medicine; American Board of Pediatrics 197D; Royal Australasian College of Physicians 1974.

Assistant Professor, Pediatrics, University of California at Los Angeles School of Medicine 197D-75; Associate Chief, Pediatric Endocrinology and Metabolism, Harbor General Hospital 197D-75.

Member: Endocrine Society; American Federation for Clinical Research; American Diabetes Assn.; Society for Pediatric Research; Sigma Xi.

ROBERT GUNTER SPIRD, M.D. -- Professor of Biological Chemistry, Harvard Medical School since 1974; Associate in Medicine, Peter Bent Brigham Hospital since 1968.

A.B., Columbia College 1951; M.D. 1955, Internship 1955-56, State University of New York; Research Fellow, Harvard Medical School 1956-58; Postdoctoral Research Fellow, American Cancer Society 1956-58; Research Fellow in Medicine, Harvard Medical School, Massachusetts General Hospital 1958-60.

Research Associate in Medicine, Harvard Medical School 1960-62; Assistant in Medicine, Peter Bent Brigham Hospital 1961-67; Research Associate in Biological Chemistry 1962-63, Associate in Biological Chemistry 1964-66, Assistant Professor of Biological Chemistry 1966-69, Associate Professor of Biological Chemistry 1969-74, Harvard Medical School.

Member: American Society of Biological Chemists; American Diabetes Assn.; American Chemical Society; Phi Beta Kappa; Alpha Omega Alpha; Editorial Board: Biochemical Medicine 1967- ; Archives of Biochemistry and Biophysics 197D- .

NORTON SPRITZ, M.D. -- Professor of Medicine, New York University School of Medicine since 1969; Chief, Medical Service, VA Hospital, Manhattan since 1969.

A.B., Johns Hopkins University 1948; M.D., University of Maryland School of Medicine 1952; Internship 1952-53, Residency 1953-54, 1957-58, Fellow in Cardiology 1956, 2nd Medical Division, Bellevue Hospital; American Board of Internal Medicine 1961.

Instructor in Medicine 1956-60, Assistant Professor of Medicine 1960-65, Associate Professor of Medicine 1965-66, Cornell University Medical College; Director, Lipid Metabolism Laboratory, 2nd Medical Division, Bellevue Hospital 1963-66; Associate Professor, Rockefeller University 1966-68.

Member: American Assn. for the Advancement of Science; American Federation for Clinical Investigation; American Oil Chemists' Society; American Society for Clinical Investigation; American Heart Assn.; American Assn. of Physicians; New York Lipid Research Club, President 1970-71; Harvey Society; Sigma Xi; Alpha Omega Alpha; Associate Editor: Journal of Lipid Research 1969-73.

DANIEL STEINBERG, M.D., Ph.D. -- Professor of Medicine, Head, Division of Metabolic Disease, Program Director for Basis Sciences in Medicine, University of California since 1968.

B.S. 1941, M.D., College of Medicine 1944; Ph.D., Harvard Medical School 1951; Internship, Boston City Hospital 1944-45, Residency, Detroit Receiving Hospital 1945-46; Postdoctoral Fellow of NIH, Harvard Medical School 1948-50; National Board of Medical Examiners 1945.

Senior Assistant Surgeon USPHS 1951-52, Surgeon, USPHS, Acting Chief, Section on Cellular Physiology 1952-53, Surgeon, USPHS, Acting Chief, Section on Metabolism, Laboratory of Cellular Physiology and Metabolism 1953-56, Senior Surgeon, USPHS, Chief Section on Metabolism, Laboratory of Cellular Physiology and Metabolism 1959-61, Chief, Laboratory of Metabolism 1962-68, National Heart Institute.

Member: Society for Experimental Biology and Medicine; American Society of Biological Chemists; American Assn. for the Advancement of Science; American Oil Chemists Society; American Society for Clinical Investigation; American Heart Assn.; American Diabetes Assn.; Endocrine Society; Alpha Omega Alpha; Editorial Board: Journal of Clinical Investigation 1968-74; Editor-in-Chief; Journal of Lipid Research 1961-64.

DONALD F. STEINER, M.D. -- A. N. Pritzker Professor of Biochemistry and Medicine since 1970; Chairman, Department of Biochemistry since 1973; Director, Diabetes-Endocrinology Center since 1974, University of Chicago.

B.S., University of Cincinnati 1952; M.S. 1956, M.D. 1956, University of Chicago; Internship, King County Hospital 1956-57; Residency 1959-60, Fellow, Postdoctoral Research, USPHS 1957-59, University of Washington Department of Medicine.

Assistant in Medicine, University of Washington, Department of Medicine 1957-60, Assistant Professor of Biochemistry 1960-66; Associate Professor Biochemistry 1966-68, Professor of Biochemistry 1968-70, Acting Chairman, Department of Biochemistry 1972-73, University of Chicago.

Member: American Society of Biological Chemists; Metabolism Study Section, USPHS 1965-70; American Academy of Arts and Sciences; American Assn. for the Advancement of Science; Biochemical Society; American Diabetes Assn.; Alpha Omega Alpha; Sigma Xi; Editorial Board: Physiological Reviews 1971- ; Journal of Biological Chemistry 1975.

ROSELLA McLAIN STUART, M.S.S.W. -- Clinical Social Worker, VA Hospital, Nashville, Tennessee since 1967.

M.S.S.W., University of North Carolina School of Social Work 1947.

Case worker for Child and Public Welfare, North Carolina 1945-49; Medical Case Worker, Duke University Hospital 1950; Child Welfare Consultant, Kentucky State Department of Child Welfare 1951; Psychiatric Social Worker, Cleveland Guidance Center 1955; Chief Social Worker, Mental Health Center, Nashville 1957-59; Social Worker on Psychiatry Service and Neurological Service, Nashville VA Hospital 1959-67; Speaker, Diabetic Teaching Staff Conferences, Vanderbilt Medical School 1970- ; Consultant to Vanderbilt Diabetes Educational Program 1970-74.

Member: National Assn. of Social Workers.

KARL E. SUSSMAN, M.D. -- Professor of Medicine, University of Colorado Medical Center since 1972.

B.A., Johns Hopkins University 1951; M.D., University of Maryland School of Medicine 1955; Internship, Barnes Hospital 1955-56; Residency, University of Colorado Medical Center 1958-61; Fellowship, Joslin Clinic 1961-62; American Board of Internal Medicine 1963.

Instructor of Medicine 1962-63, Assistant Professor of Medicine 1963-68, Associate Professor of Medicine, Head, Division of Endocrinology 1968-72, University of Colorado Medical Center; Chief, Medical Service, VA Hospital 1972-75; Clinical Investigator, VA Hospital since 1975.

Member: American College of Physicians; American Diabetes Assn.; American Federation for Clinical Research; American Physiological Society; American Society for Clinical Investigation; Central Society for Clinical Research; Endocrine Society; Alpha Omega Alpha; Associate Editor: Metabolism.

HOWARD S. TAGER, Ph.D. -- Assistant Professor of Biochemistry, University of Chicago since 1974.

B.S., University of California 1966; Ph.D., University of Michigan 1971; Post-doctoral Fellow, University of Chicago 1971-73.

Medical Technician, Wadsworth VA Hospital 1962-66; Chemist, Electro-Optical Systems, Inc. 1966; Teaching Fellow, University of Michigan 1966-71; Assistant Professor of Biochemistry, Medical College of Ohio 1973-74.

Member: American Chemical Society, Division of Biological Chemistry; American Assn. for the Advancement of Science; American Diabetes Assn; Phi Eta Sigma; Phi Lambda Upsilon.

RANDI E. THOMPSON, M.A. -- Program Design Specialist, Porter, Novelli and Associates, Inc.

B.A., University of Maryland 1973; M.A., University of Maryland 1975.

Teaching Assistant, University of Maryland 1974-75; Assistant for Planning Public, Professional, and Patient Education for National Cancer Institute.

GEORGE K. TOKUHATA, Dr. P.H., Ph.D. -- Director, Division of Research and Biostatistics, and Director, Bureau of Program Evaluation, State Health Department, Pennsylvania; Professor Epidemiology and Biostatistics, University of Pittsburgh Graduate School of Public Health; Associate Professor of Community Medicine, Temple University College of Medicine since 1967.

B.A., Keio University 1950; M.A., Miami University 1953; Ph.D., State University of Iowa 1956; Fellow, NIH, Post-doctoral 1960-61, Dr. P.H. 1962, Johns Hopkins University.

Instructor, State University of Iowa 1954-56; Research Scientist, Department of Mental Health, State of Michigan 1956-59; USPHS Trainee, Johns Hopkins Medical Center 1959-60; Special Assistant to Division Chief 1961-62, Principal Epidemiologist 1962-63, Division of Chronic Diseases, USPHS; Associate Professor of Preventive Medicine, University of Tennessee, College of Medicine 1963-67; Chief of Epidemiology, St. Jude Children's Research Hospital 1963-67.

Member: Fellow, American Sociological Assn.; Society for Epidemiological Research; New York Academy of Sciences.

POLLYANN O. TOLL -- Director and Vice President, National Juvenile Diabetes Foundation; President and Founder, Juvenile Diabetes Foundation of Southern New Jersey.

DONALD BAYLEY TOWER, M.D., Ph.D. -- Director, National Institute of Neurological Diseases and Stroke, NIH since 1974; Head, Section on Amino Acid and Electrolyte Chemistry since 1961, Chief since 1963, Laboratory of Neurochemistry, National Institute of Neurological Diseases and Blindness, NIH.

A.B., Harvard College 1941; M.D., Harvard Medical School 1944; M.Sc. 1948, Ph.D. 1951, McGill University; Internship, University of Minnesota Hospitals 1944-45; Fellow in Neurochemistry, Montreal Neurological Institute 1947-58; National Board of Medical Examiners 1945.

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Associate Neurochemist, Montreal Neurological Institute 1951-53; Instructor in Experimental Neurology 1951-52, Assistant Professor of Experimental Neurology 1952-53, McGill University; Associate Professor of Neurology and Research Consultant in Neurobiochemistry, Georgetown University Medical School 1953- ; Chief, Section of Clinical Neurochemistry 1953-61, Acting Chief, Laboratory of Neurochemistry 1961-63, National Institute of Neurological Oiseases and Blindness, NIH; Acting Oirector, National Institute of Neurological Oiseases and Stroke, NIH 1973-74.

Member: American Academy of Neurology; American Assn. for the Advancement of Science; American Chemical Society; American Neurological Assn.; American Society for Neurochemistry; American Society of Biological Chemists; Canadian Naurological Society; Canadian Physiological Society; International Brain Research Organization, United Nations Educational, Scientific, and Cultural Organization; International Society for Neurochemistry; Society for Neuroscience; Alpha Omega Alpha; Sigma Xi; Editorial Board: Journal of Neurochemistry 1968- ; Neurology 1957-68; Biochemical Pharmacology 1959- ; International Journal of Neuropharmacology 1961-66; Editor: Experimental Brain Research 1965-70.

LUTHER BRISENDINE TRAVIS, M.O. -- Professor of Pediatrics since 1973, Oirector, Oivision of Nephrology since 1972, University of Texas Medical Branch.

B.S., North Georgia College 1951; M.D., Medical College of Georgia 1955; Internship, Medical College of Virginia 1955-56; Residency, Affiliated Hospitals of Baylor 195B-60, Jefferson David Hospital 1959-60; Fellow, Metabolic and Renal Oiseases of Children, University of Texas Medical Branch 1960-62; American Board of Pediatrics 1961; American Board of Pediatric Nephrology 1973.

Assistant Professor 1962-67, Associate Professor 1967-73, Department of Pediatrics, Co-Director, Division of Pediatric Nephrology 1962-72, University of Texas Medical Branch.

Member: American Academy of Pediatrics; Society for Pediatric Research; American Federation for Clinical Research; American Society of Pediatric Nephrology; American Society of Nephrology, National Kidney Foundation; International Collaborative Study Group of Kidney Disease in Children; American Diabetes Assn.; Texas Diabetes Assn., President 1972; American Society for Pediatric Endocrinology, Galveston Research Club, President 1968; International Society of Nephrology; International Society of Pediatric Nephrology; America Heart Assn.; American Pediatric Society; Sigma Xi; Editorial Board, Texas Reports on Biology and Medicine 1970-.

H. ST. GEORGE TUCKER, JR., M.D. -- Professor of Medicine, Medical College of Virginia since 1964.

B.A. 1933, M.O. 1937, University of Virginia; Internship 1937-38, Residency 1938-39, Cincinnati General Hospital; Medical College of Virginia Hospital 1940-42; Fellow in Diabetes, Joslin Service, New England Oeaconess Hospital 1939-40.

Associate in Medicine 1941-42, Assistant Professor of Medicine 1946-59, Associate Professor of Medicine 1959-64; Chief of Division of Endocrinology and Metabolic Oiseases, Oirector of Endocrinology Clinic and Diabetes Clinic, Attending Physician, Medical College of Virginia.

Member: American Diabetes Assn., Endocrine Society; American Federation for Clinical Research; American College of Physicians; American Clinical and Clinatological Assn., President 1973-74.

MANUEL TZAGOURNIS, M.D. -- Professor of Endocrinology, Ohio State University Hospital, Department of Medicine since 1974.

B.S., Ohio State University 1956; M.D., Ohio State University 1960; M.S., Ohio State University 1967; Internship, Philadelphia General Hospital 1960-61; Residency, Ohio State University Hospital 1961-62, 1964-65, 1966-67; Fellowship, Ohio State University Hospital 1965-66; American Board of Internal Medicine 1967.

Instructor 1967-6B, Assistant Professor 196B-70, Associate Professor 1970-74, Endocrinology, Department of Medicine, Ohio State University Hospital.

Member: American Diabetes Assn.; American Federation for Clinical Research; Central Society for Clinical Research, American College of Physicians; Central Clinical Diabetes Study Group; Pan American Medical Assn.; Aplpha Omega Alpha.

MARY SUSAN UEBER, M.A. -- Research/Policy Analyst, Medical Service Consultants since 1975.

B.A., Macalester College 1972; M.A., Johns Hopkins University 1973.

Research Assistant and Policy Analyst, CU/OPP, Department of State 1974; Research Assistant, Agency for International Development 1974; Consultant, International Mission to the Middle East, National Association of Manufacturers 1974-75; Consultant, John Adams Associates 1975.

ROGER H. UNGER, M.O. -- Associate Chief of Staff for Research, VA Hospital, Dallas since 1965; Professor of Internal Medicine, University of Texas South West Medical School since 1970.

B.S., Yale University 1944; M.D., College of Physicians and Surgeons, Columbia University 1947; Internship 1947-48, Residency 1948-51, Bellevue Hospital; American Board of Internal Medicine 1956.

Instructor in Clinical Medicine, New York University Medical School 1953-55; Instructor in Clinical Medicine, University of Texas South West Medical School 1952-53, 1956-59; Medical Ward Officer, VA Hospital, Dallas 1955-57; Chief, Gastroenterology Section, VA Hospital Dallas 1957-63; Assistant Professor, Internal Medicine 1959-64, Associate Professor, Internal Medicine 1964-1970, University of Texas South West Medical School; Chief, Metabolism Section, VA Hospital, Dallas 1963-74.

Member: International Oiabetes Federation; American Oiabetes Assn.; Dallas Oiabetes Assn., President 1961-62; American Federation for Clinical Research; American Society for Clinical Investigation (Emeritus); The Endocrine Society; Fellow, American College of Physicians 1968; Assn. of American Physicians; Editorial Board: Oiabetes 196B-70; American Journal of the Medical Sciences 1966- ; The Year in Metabolism 1975- .

THEODORE B. VAN ITALLIE, M.O. -- Associate Oirector, Institute of Human Nutrition, Columbia University since 1967; Professor of Medicine, Columbia University, College of Physicians and Surgeons since 1971.

S.B., Harvard College 1941; M.D., College of Physicians and Surgeons, Columbia University 1945; Internship, St. Luke's Hospital 1945-46; Residency St. Luke's Hospital 1948-50; Research Fellow in Nutrition, Harvard School of Public Health 1950-51; National Board of Medical Examiners 194B; American Board of Internal Medicine 1954; American Board of Nutrition 1954.

Assistant in Medicine 1950-52, Associate, Medical Staff 1955-57, Peter Bent Brigham Hospital; Director, Laboratory for Nutritional Research 1952-55, Oirector of Medicine and Attending Physician 1957-75, St. Luke's Hospital; Instructor in Medicine 1952-55, Associate Clinical Professor of Medicine 1957-65, Clinical Professor of Medicine 1965-71, College of Physicians and Surgeons, Columbia University; Assistant Professor of Clinical Nutrition, Harvard University, Schools of Medicine and Public Health 1955-57; Associate Attending Physician, Presbyterian Hospital 1972-.

Member: Fellow, American College of Physicians; American Assn. for the Advancement of Science; American Clinical and Climatological Assn.; American Diabetes Assn.; American Federation for Clinical Research; American Institute of Nutrition and Society for Clinical Investigation; Society for Experimental Biology and Medicine; Editorial Board, Oiabetes 1960-71.

MELBA A. VANWAGONER, R.N. -- Nurse at Van Buren Convalescent Center.

R.N., Memorial Hospital College of Nursing.

Faculty Member, Michigan Oiabetes Assn. Para-Medical Postgraduate course in Oiabetes 1971-73.

Member: International Oiabetes Federation.

MARTHA VAUGHAN, M.D., Ph.B. -- Chief, Laboratory of Cellular Metabolism, Acting Chief, Molecular Branch, National Heart and Lung Institute since 1974.

Ph.D., University of Chicago 1944; M.D., Yale University School of Medicine 1949; Internship, New Haven Hospital 1950-51; Fellow, Department of Physiological Chemistry, Yale University School of Medicine 1949; Fellow, University of Pennsylvania 1951-52; Fellow, Laboratory of Cellular Physiology, National Heart Institute, NIH 1952-54.

Senior Assistant Surgeon, Surgeon, Senior Surgeon USPHS, Laboratory of Cellular Physiology and Metabolism, National Heart Institute, NIH 1954-62; Medical Director, USPHS, Laboratory of Cellular Physiology and Metabolism, NHI, NIH 1962-68; Visiting Scientist, Departement de Biologie, Centre d'Etudes Nucleaires 1964-65; Head, Section on Metabolism, Molecular Disease Branch, NHLI, NIH 1968-74.

Member: American Society for Biological Chemists; American Society for Clinical Investigation; Assn. of American Physicians; Editorial Board: Journal of Biological Chemistry 1971- , Molecular Pharmacology 1972- , Journal of Biochemical Pharmacology 1973- .

ALFRED MOHR WEBB, Ph.D. -- Chief, Program Planning and Projection Staff, National Institute for Atherosclerosis and Immunological Diseases since 1966.

B.A., Lehigh University 1935; M.S. Lehigh University 1937; Ph.D., Massachusetts Institute of Technology 1947.

Research Assistant, Harvard Medical School 1938-41; Research Bacteriologists, Lederle Laboratories 1942-46; Teaching Assistant 1946; Chief of Laboratory, Aerobiology 1947-49; Assistant to the Chief Medical Veterinary Division 1949-54; Assistant Chief, Virus and Rickettsia Division 1954-60; Scientist Administrator, Extramural Programs 1960-62, Scientist Administrator, Virus Reagents Program 1962-63, Chief, Research Reference Reagents Branch 1963-66, NIAID.

Member: American Society for Microbiology, American Assn. for Advancement of Science; New York Academy of Sciences, Sigma Xi.

KELLY MCGUFFIN WEST, M.D. -- Professor of Medicine, University of Oklahoma College of Medicine since 1963.

M.D., University of Oklahoma 1948; Internship, St. Luke's Hospital 1948-49; Residency, St. Anthony's Hospital 1949-5D,; University of Michigan Hospital 1951-52; Fellow, Joslin Clinic 1950-51; American Board of Internal Medicine 1955.

Clinical Assistant 1952, Instructor 1953-56, Assistant Professor of Medicine 1957-61, Associate Professor of Medicine, University of Oklahoma School of Medicine; Professor and Chairman, Department of Continuing Education, University of Oklahoma 1963-69; Director of Oklahoma Regional Medical Program 1967-68.

Member: Fellow, American College of Physicians; American Federation for Clinical Research; Central Society for Clinical Research; American Therapeutic Society; American Diabetes Assn., Board of Directors 1958-61; Alpha Omega Alpha; Associate Editor: Metabolism 1965-69.

PEGGY JOYCE WHALLEY, M.D. -- Professor, Department of Obstetrics and Gynecology, University of Texas, Southwestern Medical School since 1971; Senior Attending Obstetrician and Gynecologist, Parkland Memorial Hospital since 1961.

B.S., North Texas State 1948; M.D., University of Texas Southwestern Medical School 1956; Internship 1956-57, Residency 1957-60, Parkland Memorial Hospital; Fellowship, Renal Section, University of Texas, Southwestern Medical School 1960-61.

Assistant Professor 1961-66, Associate Professor 1966-71, Department of Obstetrics and Gynecology, University of Texas Southwestern Medical School

Member: American College of Obstetricians and Gynecologists; American Society of Nephrology; Society for Gynecologic Investigation; Alpha Omega Alpha.

G. DONALD WHEDON, M.D. -- Director National Institute of Arthritis, Metabolism, and Digestive Diseases since 1962.

A.B., Hobart College 1936; M.D., University of Rochester School of Medicine 1941; Sc.D., Hobart College 1967, Internship in Medicine, University of Rochester School of Medicine; Residency, Strong Memorial Hospital 1942-44, American Board of Internal Medicine 1950.

Instructor in Medicine, Medical College 1944-50, Asst. Professor of Medicine 1950-52, Cornell University; Chief, Metabolic Diseases Branch, NIAMDD 1952-65; Asst. Director, NIAMDD 1956-62.

Member: The Endocrine Society, American Physiological Society, American Institute of Nutrition, American Federation for Clinical Research, New York Academy of Sciences, American Assn. for the Advancement of Science, American Diabetes Assn., Editorial Boards: Journal of Clinical Endocrinology and Metabolism 1960-67, Calcified Tissue Research 1967-.

FRED W. WHITEHOUSE, M.D. -- Chief, Division of Metabolic Diseases, Henry Ford Hospital since 1962.

B.S., Northwestern University 1945; M.D., University of Illinois 1949; Internship 1949-50, Residency 1950-54, Henry Ford Hospital; Fellow in Medicine, Joslin Clinic and New England Deaconess Hospital 1954-55; American Board of Internal Medicine 1957; Sub-specialty, Endocrinology and Metabolism 1973; Recertified 1974.

Associate Physician, Henry Ford Hospital 1955-62.

Member: American College of Physicians; American Diabetes Assn.; American Federation for Clinical Research; American Society of Internal Medicine; Michigan Diabetes Assn., President 1968-70; Detroit Medical Club, President 1972-73.

LOUINIA MAE WHITTLESEY -- Executive Director, Diabetes Association of Greater Cleveland since 1963.

B.S., Smith College 1945.

Member: Smith Club, Board of Trustees; Saint Luke's Hospital Junior Board, Board of Trustees; Junior League of Cleveland, Board of Trustees; Diabetes Assn. of Greater Cleveland.

ROBERT H. WILLIAMS, M.D. -- Director, Diabetes Center since 1974, Professor of Medicine since 1948, University of Washington.

A.B., Washington and Lee 1929; M.D., Johns Hopkins 1934; Internship, Harvard University 1934-35, Vanderbilt University 1935-36; Residency, Vanderbilt University 1936-37, 1938-39, Johns Hopkins University 1938-39; Fellow, Endocrinology, Harvard University 1939-40.

Assistant Professor Medicine 1940-48, Harvard University; Chairman, Department of Medicine 1948-63, Head, Division of Endocrinology and Metabolism 1948-75, University of Washington.

Member: American Society for Clinical Investigation, President 1954; Assn. of American Physicians, President 1968; Endocrine Society, President 1959; Research Society Council, President 1966; American Diabetes Assn.; American Federation for Clinical Research; Society for Experimental Biological Medicine; American Assn. for the Advancement of Science; American Goiter Assn.; Boylston Society, President 1945; Alpha Omega Alpha; Sigma Xi; Phi Beta Kappa; Kappa Alpha; Alpha Kappa Kappa.

THOMAS FRANKLIN WILLIAMS, M.D. -- Professor of Medicine, Preventive and Community Medicine, Radiation Biology and Biophysics, University of Rochester; Medical Director, Monroe County Hospital since 1968.

B.S., University of North Carolina 1942; M.A., Columbia University 1943; M.D., Harvard Medical School 195D; Internship 195D-51, Residency 1951-52, Johns Hopkins Hospital; Residency, VA Hospital, Boston 1953-54; Fellow in Medicine, University of North Carolina 1954-56; Special Fellow, Department of Physiology, Vanderbilt University 1966-67; National Board of Medical Examiners 1951; American Board of Internal Medicine 1964.

Assistant in Medicine, Boston University 1953-54; Instructor in Medicine and Preventive Medicine, University of North Carolina 1956-68.

Member: American Assn. for the Advancement of Science; American Federation for Clinical Research; American Scoiety of Human Genetics; Society for Experimental Baiology and Medicine; Fellow, American College of Physicians; American Diabetes Assn.; North Carolina Diabetes Assn., President 1967-68; Phi Beta Kappa; Alpha Omega Alpha; Sigma Xi.

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B.A., Phillips University 1954; M.D., Washington University School of Medicine 1958; Internship, Barnes Hospital 1958-59; Residency, Pathology, Barnes Hospital 1959-61; Research Fellow in Medicine, Harvard University School of Medicine 1962-63.

Assistant in Pathology, Washington University School of Medicine 1958-61; Assistant in Surgical Pathology, Barnes Hospital 1961; Instructor in Pathology 1962-63, Assistant Professor of Pathology 1962-29, Washington University School of Medicine.

Member: American Assn. for the Advancement of Science; American Assn. of Pathologists and Bacteriologists; American Diabetes Assn.; American Society for Cell Biology; Federated Society of Experimental Biology and Medicine International Academy of Pathology Reticuloendothelial Society.

ALBERT I. WINEGRAD, M.D. -- Head, Diabetes Section, Department of Medicine, University of Pennsylvania since 1966; Director, George S. Cox Medical Research Institute, University of Pennsylvania since 1966; Professor of Medicine, University of Pennsylvania since 1970.

M.D., University of Pennsylvania 1952; Internship 1952-53, Residency 1953-55, Hospital of the University of Pennsylvania; Postdoctoral Research Fellow, Harvard Medical School, Department of Medicine, Peter Bent Brigham Hospital 1955-57; American Board of Internal Medicine 1967.

Instructor in Medicine 1957-58, Associate in Medicine 1958-60, Assistant Professor of Medicine 1970, University of Pennsylvania.

Member: American College of Physicians; American Physiological Society; American Society for Clinical Investigation; Endocrine Society; Alpha Omega Alpha; Phi Beta Kappa.

WILLIAM WISHNER, M.D. -- Assistant Professor, Charles R. Drew Postgraduate School of Medicine since 1975; Chief, Diabetes Section, Martin Luther King, Jr. Medical Center since 1975.

B.A., LaSalle College 1963; M.D., Temple University School of Medicine 1967; Internship 1967-68, Residency 1968-71, Temple University Hospital; Fellow Temple University School of Medicine 1968-69; Fellow, University of Southern California School of Medicine, University of Southern California/Los Angeles County Medical Center 1971-72.

Instructor, Internal Medicine, University of Southern California School of Medicine 1972-73.

Member: Diabetes Assn. of Southern California; Los Angeles County Medical Society.

DONALD E. YETT, Ph.D. -- Director, Human Resources Research Center since 1966, Professor of Economics, Department of Economics since 1973, Professor of Community Medicine and Public Health, Medical School since 1973, University of Southern California.

Instructor in Economics and Research Associate, Systems Research Group, Engineering Experiment Station, Ohio State University 1958-61; Instructor in Economics and Research Project Director, Medical Care Research Center, Washington University 1961-65; Assistant Research Economist, School of Public Health, University of California at Los Angeles 1965-66; Assistant Professor of Business Economics and Finance, University of Southern California Graduate School of Busines Administration 1966-69; Associate Professor 1969-71, Professor 1971-73, of Business Economics, Graduate School of Business Administration, and of Community Medicine and Public Health, and Adjunct Professor of Economics, Department of Economics and the Medical School, University of Southern California.

Member: American Economic Assn.; Health Economics Research Organization, Chairman; Assn. for Social Economics; Omicron Delta Epsilon; Beta Gamma Sigma; Board of Associate Editors: Applied Mathematics and Computation 1974- ; Editorial Board: Inquiry 1967- .

RALPH E. YODAIKEN, M.D. -- Professor of Pathology since 1972, Associate Professor of Medicine since 1973, Emory University.

M.B.,University of the Witwatersrand; B.Ch., University of the Witwatersrand; Internship, Coronation Hospital 1957-58; Residency, Department of Pathology, University of Witwatersrand.

Lecturer, Department of Pathology 1959-63, Lecturer, South African College of Physician Surgeons, and Gynecologists 1962-63, University of the Witwatersrand; Assistant Professor of Pathology, State University of New York 1963-67; Associate Pathologist, Buffalo General Hospital 1965-67; Associate Professor of Pathology, University of Cincinnati College of Medicine, 1968-71; Attending Physician, Diabetic Clinic, Cincinnati General Hospital 1969-71; Attending Physician, Cincinnati Free Clinic 1970-71.

Member: Royal Microscopical Society; American College of Pathologists; American Diabetes Assn.; International Academy of Pathology; Electron Microscopy Society of America; Federation of American Scientists.

JONATHAN ZONANA, M.D. -- Fellow in Medical Genetics, Harbor General Hospital, University of California at Los Angeles since 1974.

B.A., University of Pennsylvania 1967; M.D., University of Pennsylvania Medical School 1972; Internship 1972-73, Residency 1973-74, University of Southern California Medical Center; National Defense Fellow in Biochemistry 1968; NIH Fellow in Medical Genetics and Birth Defects 1974-76; National Board of Medical Examiners 1973; American Board of Pediatrics, Board Eligible 1974.

Member: American Society of Human Genetics; Los Angeles Pediatric Society, Phi Beta Kappa 1967.

WILLIAM J. ZUKEL, M.D., D.P.H. -- Associate Clinical Professor of Epidemiology and Environmental Health, George Washington University School of Medicine since 1967; Associate Director for Clinical Applications and Prevention, Division of Heart and Vascular Diseases, Acting Chief, Preventive Cardiology Branch since 1969.

B.S., Massachusetts State College 1943; M.D., Hahnemann Medical College 1947; D.P.H., London School of Hygiene and Tropical Medicine 1961; Internship and Residency, Newton-Wellesley Hospital 1947-50; Internal Medicine; Preventive Medicine.

Medical Officer in Charge, Newton Heart Demonstration Program, USPHS 1950-51; Assistant Chief 1951-52, Acting Chief 1952; Heart Disease Section; Division of Chronic Diseases, USPHS; Postgraduate Assistant in Medicine Massachusetts General Hospital; Harvard Medical School 1952-53; Postgraduate Assistant in Medicine, Harvard Medical School and Massachusetts General Hospital 1952-53; Assistant in Medicine, Albany Medical Collge 1953-55; Assistant in Medicine, Albany Medical College 1953-55; Chief, Operational Research Section, Heart Disease Control Program, USPHS 1955-57; Clinical Instructor in Medicine, Georgetown Unviersity 1956-57; Assistant Director, National Heart Institue 1957-58; Assistant for Program, Office of the Surgeon General, USPHS 1958-60; Acting Associate Director for Biometry and Epidemiology 1961-62, Associate Director for Collaborative Studies and Chief Geographical Diseases Section 1962-67, Associate Director for Epidemiology and Biometry 1967-74; Chief, Georgraphical Diseases Section 1967-74, NHI.

Member: American College of Cardiology; America Heart Assn.; Society for Epidemiologic Research; International Society of Cardiology; New York Academy of Sciences; Massachusetts Medical Society.

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